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WHOLE CLASS SELF - MANAGEMENT IN AN ELEMENTARY SCHOOL SETTING: IT'S EFFECTIVENESS AND PRACTICALITY

BY

Crystal A. Hungle ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial
fulfillment of the requirements for the degree of MASTER OF EDUCATION.

IN

COUNSELLING PSYCHOLOGY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

FALL 1994

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled WHOLE CLASS SELF - MANAGEMENT IN AN ELEMENTARY SCHOOL SETTING: IT'S EFFECTIVENESS AND PRACTICALITY submitted by CRYSTAL A. HUNGLE in partial fulfillment of the requirements for the degree of MASTERS OF EDUCATION in COUNSELLING PSYCHOLOGY.

Dr. George Fitzsimmons

Dr. Henry Janzen

Dr. Bernard Schwartz

September 14, 1994

ABSTRACT

This study addresses one area of behavior change technology, self - management, which has been proven to be useful for a variety of individuals for the purpose of enhancing student feelings of personal control and improving behavioral and academic responses within an educational setting. A pre - posttests group experimental design was used at the grade 4 and 6 level in regular classrooms in a kindergarten to grade 9 school. The purpose was to assess the effectiveness of a self - management program utilizing self - monitoring and self - evaluation that had been designed to be implemented classwide. On - task and listening behavior, effort and assignment completion were targets for self - evaluation/monitoring for approximately 5 weeks. Teacher ratings, subject self -ratings and a perception of locus of control questionnaire served as the dependent measures. Data collected from all students in the experimental groups revealed that in comparison to control groups, gains were made regarding teacher and student perceptions of behavioral and academic changes. Findings pertaining to locus of control however were inconsistent.

PREFACE

In search of more effective interventions to deal with the seemingly increasing demands of school staff to effectively manage not only student academic progress but their behavior as well, I came across the area of self - management. As a school counsellor dealing with a variety of individuals of various ages and academic/behavioral deficits, self - management interventions were captivating. Although I was familiar with the various traditional behavioral and cognitive interventions, it seemed that there had to be something more efficient and effective across a variety of ages and developmental levels. Something that was flexible enough to be easily modified for a variety of individuals and still be effective. After feelings of floundering while striving for counsellor effectiveness and trying to effectively be of assistance to classroom teachers, I felt I had come upon an area which seemed to hold a lot of promise in the way of being an intervention that, is simple, immediately effective, durable, generalizable, humane, and, promotes the development of accountability or responsibility where it should be - with the student. The placement of responsibility with students appealed to me most as students today appear very adept at manueverings that would prevent this from happening regardless of the intervention employed. Personal experience also leads me to believe that the lack of reponsibility students exhibit is of major concern to teachers having to deal with numerous behavioral and/or academic problems at one time. My thesis grew from the notion that self - management interventions could be an ideal way for counsellors to support classroom teachers in their quest to remediate behavioral/social and academic deficits in regular and mainstreamed students.

With my discovery of commercial self - management programs I have successfully implemented self - management interventions with individuals displaying behavioral and academic deficits as well as on a classwide instructional level. I have found the techniques to be very conducive to developing teacher/counsellor - student interactions that facilitate the personal growth of the student with respect to accepting responsibility and developing a more internal versus an external perception of control.

My thesis is now an attempt to prove that my perceptions of such interventions are accurate and that self - management strategies can be successfully integrated into regular classroom instruction requiring no more teacher/counsellor time than other interventions.

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CHAPTER 1. INTRODUCTION

School personnel are constantly dealing with the problem of finding and utilizing effective in - classroom interventions for students with academic and behavior problems. With the focus in education towards accountability, pressure is often great for such interventions to be effective with a variety of student populations and problems in a relatively short time span. Emphasis is also being placed on proactive or preventative methods of classroom management with movement away from those methods that tend to be reactive. Self - management interventions are the focus of much attention because they show potential for fulfilling these demands being placed on behavior change interventions. As Cole and Bambara (1992) state, "we know these interventions have been effective with a variety of academic and behavior problems exhibited by students of all ages and disability categories" and "we also know self - management typically produces immediate effects". (p. 199). In their review of the self - management literature, Nelson, Smith, Young and Dodd (1991) found the procedures useful in promoting the social and academic behavior of students exhibiting problems and that the moderate to large durable treatment effects are indicative of the power of such procedures.

Self - management programs have evolved from Skinnerian self - control theories as alternatives to behavior modification treatments (Brigham, 1992). In conjunction with other procedures and when fully and systematically implemented, self - management approaches are better ways to teach (Brigham, 1992). One of the largest unanswered questions regarding self - management interventions however, appears to be how practical are they to being implemented on a classwide basis (Cole et. al., 1992). There are many problems associated with implementing self - management interventions in this way. For example, most of the in - classroom research on self - management interventions have involved individuals or small groups of students. This type of intensive, individualized programming is obviously not feasible in most classrooms. Classwide use of the strategies would require modification of the procedures reported in the current literature. This thesis project is one such undertaking where a self - management program was implemented classwide.

Self - evaluation and self - monitoring were the self - management components of choice for the study. Skinner and Smith (1992) recognize these approaches as being able to reduce the need for immediate teacher feedback. This of course would be required in a classwide application of such procedures where an entire class is responding, making it difficult for teachers to deliver precise and immediate feedback to each student. In order to collect data on such a study, the typical observational procedure was not feasible. Rather, self - ratings as well as teacher ratings were utilized to assess baseline and treatment behavioral/academic reponses with respect to the selected targets. Comparisons were then made between experimental and control groups. The hypothesis being that the treatment - utilization of self - management strategies - would have a positive effect on teacher and student perceptions as evidenced by their improved ratings of selected target behaviors. In this way, not only can school - related problems be potentially avoided, but the functioning of "unreferred populations" (Fantuzzo and Polite, 1990) will be potentially positively affected as well.

Also of interest in this study is the effect self - management interventions may have on perceived locus of control. Self - management interventions are desirable for their support in developing independent, empowered learners who view themselves as having control within their learning environments. If this is the case then, one would expect that after having experienced a self - management intervention, one's perceptions of control would become more intrinsic. Therefore, in this study, control and treatment groups were compared on how they scored on a locus of control measure. This is an area of interest which has not been sufficiently investigated within the self - managment research.

This thesis also attends to social validity issues of self - management interventions. Not only are comparisons between treated and non treated individuals made and the effectiveness measured, but the acceptability, appropriateness and ease of implementation are other questions that hopefully would be provided some answers to.

The present study is considered a less intensive self - management approach due to classwide application. The major differences in comparison to the bulk of the existing literature are:

1) data collection - which was based on rating type questionnaires rather than observational data
2) the inclusion of a personality measure - locus of control
3) a between groups experimental design
4) the assessment of social validity

In light of the high importance of improving both achievement and discipline in schools it is hoped the present study will lend further support to the practicality and effectiveness of self - management interventions in a regular classroom.

CHAPTER II. LITERATURE REVIEW

Following is a review of the literature on self - management as it pertains to academic and/or behavioral learning. This review is intended to provide clarification of self - management terminology, it's utility in the classroom and the current educational research using such interventions. Following this, problems associated with research in this area will be discussed.

Self Management Defined

Self - management interventions refer to cognitive - behavior modification procedures whereby covert thought processes are manipulated to bring about a change in overt behavior. Thomas (1980) describes these interventions as involving "the transfer to students of responsibilities typically held by the teacher" (pg. 218). Self-control is a term used to indicate the use of self - management type interventions. Thomas (1980) defines self - control as the application of behavior modification techniques in a situation to maintain a behavior already brought under control with the use of systematic reinforcement procedures. Other researchers (Cole et. al., 1992) would use the terms self - management and self - control interchangeably. The behavior modification techniques or components of self-management are specific. Glynn, Thomas, and Shee (1973) delineate four components of self-management:

(1) Self - Assessment - the individual may examine his or her own behavior and decide whether or not he has performed a specific behavior or class of behaviors.

(2) Self - Recording - the individual may objectively record the frequency of his or her performance of a given behavior or class of behaviors.

(3) Self - Determination of Reinforcement - the individual may determine from all available reinforces the nature and amount of reinforcement he or she should receive contingent upon his or her performance of a given behavior or class of behaviors.

(4) Self - Administration of Reinforcement - the individual dispenses his or her own reinforcement (which may or may not be self - determined) contingent upon his performance of a given behavior or class of behaviors.

Typically, self-assessment and self-recording are referred to as self-monitoring and less often as self - observing. Workman (1982) classifies self - monitoring as being either frequency monitoring (involving a recording of each occurrence of a specified behavior) or interval monitoring (involving the recording of the presence or absence of a particular behavior during a given interval of time). Self-regulated learning is another term used to refer to self - management techniques and includes the above self-control components as well as two others. For example, Graham, Harris, and Reid (1992) identify self-instruction and goal setting as components of self-regulated learning in addition to self-monitoring and self-reinforcement. They define self-instructions as "self-directing" dialogue expressed overtly (out loud) or covertly (inside the mind) to regulate behavior. Goal setting is self-explanatory and seen as providing learners with a means for making complex problems more manageable and less threatening. In their theoretical framework of self - regulation, Kanfer and Gaelick - Buys (1991) propose a multistage model of the critical variables. The three primary components include 1) self - monitoring, 2) self - evaluation and 3) self - reinforcement. Self - monitoring refers to the individual deliberately attending to his/her behavior. Self - evaluation is the comparison between what one is doing and what one ought to be doing. Self - reinforcement refers to the person reacting cognitively and emotionally to the results of self - evaluation. Kanfer et. al. see these reactions as having feedback effects (affecting the strength of the preceding behavior) as well as feed forward effects (influencing the individual's expectations and behavior on future occasions). It is this self - generated feedback, positive or negative (together with personality differences and ecological variables) that regulates future behavior. This multistage model is considered to be an excellent attempt at theory construction because it summarizes many empirical studies (Jeffrey, 1974). Self - evaluation has also been presented as another component of self - management by Mace, Brown and West (1987). These researchers describe self - evaluation as involving a comparison between self - management information and the individual's standard for the behavior. Essentially, it is a search on the part of the individual for a match between what is done and what should be done. Their definition therefore is consistent with that of Kanfer et. al. (1991). Workman (1982) uses the term self - assessment to refer to the evaluation of behavior which can be any one of three techniques: self -ratings, self - instruction or verbal mediation training. Webber, Scheuermann, McCall and Coleman (1993) include self - evaluation as a second type of self - monitoring where the "individual evaluates their own performance and rate it according to a set criterion" (p 39). Shapiro (1989) also indicates self - evaluation to be a component of self - management and included it in a self - management program delivered to high school students. Smith, Young, West, Morgan and Rhode (1988) used self - evaluation as their self - management intervention with junior high students.

The above summary of terms and definitions used within the self - management research clearly shows that unless investigators are careful to define their terms, confusion and inconsistencies regarding their meanings can arise. Self - regulated learning techniques appear to be inclusive of self - control techniques but are not necessarily only utilized for maintenance effects of other behavior modification programs. There is no uniform classroom self - management intervention or one identifiable treatment package, rather, there are a number of strategies that are different combinations of the specific "student - managed" techniques just discussed. Self - management techniques therefore, refer to those described as being self - control or self - regulating interventions whereby the goal is to increase student self - awareness, responsibility and control for their own behavior, and to become more independent from external controls such as teachers.

For the purpose of this study, self - evaluation will be considered part of the self - monitoring process whereby, rather than the frequency of target behaviors being recorded, subjects will record their ratings of target behavior. This presuposes that students self - observe before self - evaluating and recording as Gross and Drabman (1982) state " evaluating one's behavior according to an external criterion can not be performed without self - monitoring of that behavior" (p. 295).

Self - Management as an Instructional Goal and the Utility of such Interventions

Interest in classroom research on self - management intervention is based on a number of factors. These factors include ; 1) personal control issues and academic acheivement, 2) numerous positive research findings, 3) utilization potential, 4) benefits over externally managed programs and 6) reactivity effects.

Personal Control and Academic Achievement

Self - management interventions generally involve processes related to changing or maintaining one's own behavior (Cole, 1992). Students are taught strategies and processes to use in order to increase their appropriate academic or social behaviors and/or decrease their inappropriate classroom behaviors. Researchers believe this to be important in developing students who are capable of taking responsibility for controlling their own behavior (Anderson, 1983). Self - management is intended to move away from the reliance upon external agents in the treatment of behavior/academic problems. Glynn, et. al. (1973) stated that "classroom behavior that is independent of teacher control or control by any agent external to the learner is a commonly acknowledged primary goal of education" (p. 105). Thomas (1980) also relates a shared feeling among investigators where self - control techniques are thought to have the potential to; 1) free students from a dependency on external reinforcement, 2) provide more academic choices and, 3) foster a sense of agency over the learning process.

This "agency" or being actively involved in learning is important especially for the LD child who is often a passive learner, not believing in his or her own abilities. Passivity may also be related to the tendency for the teacher to become the discriminating stimulus for the appropriate behavior which puts another limitation on the learner (Sander, Bott, Hughes, and Ruhl, 1991). A sense of agency is important in enhancing one's perception of control. Thomas (1980) states "instructional strategies designed to enhance a sense of agency tend also to enhance academically engaged time, achievement and achievement - related behaviors" (p. 216). He believes that self - control procedures are an effective way to provide students with a feeling of control over their behavior. Anderson and Prawat (1983) agree in that students with a stronger sense of personal control over outcomes are higher achievers who accept more responsibility for their achievement. Thomas considers self - management training to be as important as academic achievement where "the extent to which students see themselves as a cause of their own behavior may be the single most important determinant of continued motivation" (pg. 231). According to Spaulding (1992) as well, when teachers want to enhance their students intrinsic motivation in academic environments, they must provide their students with significant control opportunities. It is also claimed that self-management, in itself, takes on motivational properties that result in behavioral changes (Hallahan and Sapona, 1983). Often, students are found to chose to continue self-monitoring even when they are given the option to stop (Graham, et. al. 1992). Therefore, self - management interventions are viewed by many researchers as enhancing student perceptions of control and as having a very positive impact on motivation where the continued willingness of the student to learn is fostered. While experiencing a sense of power and competence, self - management may meet with less resistance from students than strategies using external control.

To add support to the usefulness of self - management procedures in enhancing student learning, Risemberg and Zimmerman (1992) wrote on how these procedures may set the gifted student apart from her or his counterpart. These writers describe self - regulated learners as self - confident or self - efficacious about their capabilities to learn ..." (p.98). The value of self - regulation in school is "readily apparent" where students "would be likely to achieve at higher levels than would their counterparts who are dependent on their teacher ...". Gifted students are considered to be self - regulated learners where gifted students "favor self - management and self - monitoring". On whole, the writers believe that gifted students utilize more self - regulating strategies than do ungifted students. In this analysis of gifted students and self - regulation then, teaching non gifted students self - regulation strategies has the potential to enhance their self confidence and self - efficacy about their capability to learn. Being consistent with the views of Risemberg et. al., Miller (1991) believes that learning disabled students tend not to use self - regulation strategies, such as self - assessment, in their areas of deficit. Miller believes if learning disabled students were taught to self - regulate (make judgments about their performance) in the areas of deficit, this alone will often lead to corresponding improvement in actual academic performance.

Self - management strategies therefore, can potentially support the development of an internal orientation (perceptions or beliefs that events are primarily under control of the individual) versus an external orientation (perceptions or beliefs that external factors are the primary determinants of events). The development of an internal orientation is important to achievement where " evidence is relatively consistent in suggesting that academic achievement is positively related to an internal orientation" (p. 117, Hallahan, Lloyd, Kaukkman and Loper, 1983). Kanfer et. al. (1991) summarize it quite nicely - "research suggests that intrinsic motivation facilitataes the learning process - subjects who are internally motivated generally select harder tasks, are more creative, produce performance of high quality and are subsequently more interested in working at the task than students working for external rewards on the same problem" (p. 307). A more detailed look at the concept of locus of control is provided further on.

Effectiveness

Cole (1992) found a number of recent rewiews of the self - management literature to indicate that most studies report positive results using various self - management strategies and indeed , this appears to be the case with respect to the studies reviewed in this study. Numerous other researchers attest to the effectiveness of self - management procedures (Nelson et. al., 1991; Elliott and Shapiro, 1991; O'Leary and Dubey, 1979; Rosenbaum and Drabman, 1979 and McLaughlin, 1976.). The application of self-management interventions has been successful in remediating a variety of problem behaviors exhibited by children and adolescents in clinical (Thomas, 1980) as well as school settings (Cole, 1992, Cole, et. al. 1992). Most studies are reported to have obtained positive results using various self-management strategies (Cole, 1992). Therefore, the success of such interventions with a variety of individual problems makes them appealing for school personnel who deal with such diverse populations and who would like to emphasize prevention rather than reactive methods of classroom control and discipline. In their review, Nelson et. al. (1991) found self - management research to obtain "moderate to large durable treatment effects. Self - management interventions also tend to produce immediate effects (Cole et. al., 1992).

Utilization

The utilization potential of self - management strategies is considered to be high (Fantuzzo et. al., 1990). Many of the procedures are relatively easy to use and demands on teachers may be reduced as a result of the responsibility given students in these interventions. In comparison to other behavior modification procedures using external control techniques, self-management interventions would appear to have the benefits of being less costly and not as time consuming or logistically difficult (Thomas, 1980). Logistically difficult here referring to the use of extensive contingency based management procedures for effectiveness. Despite the claim as being relatively amiable to regular classroom use, as the research indicates, self - management procedures are not widely used. Fantuzzo and Rohrbeck (1992) indicate that self - management strategies have not passed the important "teacher utilization" test. Witt (1986) states the problem with most of the technology for use in educational settings as being that of under utilization despite the proliferation of research in this area. According to Witt, with very minor exceptions, teaching and learning occur today much as they have for the past half century as the literature pertaining to behavior management alone is rarely used by teachers, let alone even considered. Witt stresses the importance of, effectiveness, time and personnel resources required, theoretical orientation of interventions and the degree of ecological intrusiveness in implementing any type of behavior change program. Therefore, it is important that self -management interventions satisfy the criteria in each of these factors in order to be more widely accepted and utilized. Interventions which teachers "think" to be effective and appeal to their "values and common sense" appear to be likely to be adopted despite empirical support for them (Witt, 1986). Self - management strategies appear to be capable of appealing to teachers in this sense given the rationale for developing internal versus external control or motivation in students. Self - management interventions show promise in meeting requirements deemed important by Witt for high utilization as demonstrated by very few studies using classwide self - management interventions (Miller, Strain, Boyd, Jarzynka and McFetridge, 1993, Sagotsky, Patterson & Lepper, 1978, Ballard & Glynn, 1975, Glynn et. al., 1973). With respect to these studies, classwide implementation of self - management techniques is found to be effective and reduces demands on teacher time for discipline type activities.

Self - Management Versus External Management

Self - management interventions are appealing due to problems associated with externally managed interventions. Besides placing the child in the role of a passive recipient of treatment (Hallahan et. al., 1983), Thomas (1980) states that reliance on external rewards, especially when back-up reinforces are required , is probably not an appropriate long-term procedure. He also does not see the potential for behavior modification procedures (with external reward systems) to be effective in "leading to the sort of intrinsic motivation necessary to ensure out-of-class learning" (pg. 232). The reason being may be due in part to the external agents becoming the discriminative stimuli in these interventions and the child performs the target behavior only in the presence of the individual who delivers the reward. It is also important to mention however, that external rewards can be useful in the initial stage of a change program when the individual requires additional incentives to initiate new behaviors (Kanfer et. al. 1991). Cole (1992) also mentions the hope of durable and generalizable behavior gains where self - management interventions emphasize the teaching of "portable coping strategies intended to transfer across behaviors and contexts" (pg. 189). Kanfer et. al. also states that the utility of any change program is in the set of generalizable coping strategies learned in order to aid in avoidung or handling future problems more effectively than in the past. Self - management techniques therefore, are hoped to provide more generalizable and maintained treatment effects over externally - managed ones. A study which demonstrated superiority of self - management procedures to externally managed procedures was conducted by Bolstad and Johnson (1972). These researchers also reported evidence for maintenance of the desired behavior change. Rhode et. al. (1983) find treatment gains that were regulated by self - management procedures were also reported to be more resistant to extinction than those established by externally - managed procedures alone. Wood and Flynn (1978) have also found this to be the case. Studies like these continue to lead the appeal for self - management interventions over externally managed ones.

Reactivity

Self - management interventions have also received considerable attention, particularly self-monitoring because of the tendency to produce reactive effects (Maag, Rutherford and DiGangi, 992). Using the definition of Mace et. al. (1987), reactivity refers to "changes that take place in the self-monitored response as a result of observing and recording one's own behavior" (pg. 162). Therefore, once students begin to self - monitor, this in and of itself brings about changes in behavior without any other intervention. Self - management interventions are designed to increase self - awareness and it is this increased self - awareness that is thought to add to the production of reactive effects (Kanfer et. al., 1991).

How does self - monitoring change behavior?

Webber et. al. (1993) posit three basic views to explain behavior change brought about by self - monitoring. With respect to metacognitive orientations, it is speculated that "attending to one's own behavior causes it to change solely because one becomes aware of it" (p.39). This in turn leads to self - regulation (managing one's own behavior) assuming that covert or internal cognitive processes control behavior. A second explanation combines cognitive and behavioral explanations. In this case, "the act of self - monitoring results in self - evaluation which in turn, results in covert self - reinforcement or self - punishment" (p.39). Covert self - evaluation then, is cued to occur by self - monitoring. Behavior change occurs as a result of covert consequences which follow covert self - evaluation. The third explanation provided by Webber et. al. speculates that " the act of self - monitoring simply functions as a cue, or a discriminative stimulus, for behavior that is under the control of external consequences" (p.39). Therefore, in this case, the entire self - monitoring procedure (training and implementation) acts as the antecedent that causes behavior change rather than the target response alone. Adding to it's reactive effects, Kanfer et. al. (1991) also bring to light the important feature of self - monitoring which is it's incompatability with the continuation of undesirable behavior(s). Besides an understanding of how self - monitoring actually becomes reactive, it may also be helpful to know what factors will maximize reactivity. Gardner and Cole (1988) listed the following variables as possibly affecting the reactivity of self - monitoring. These are:

> (1) the valence of behavior where self - monitoring positively valenced behaviors is more likely to result in reactivity than self - monitoring negatively valenced behaviors;
> (2) nature of the recording device and procedures where the more obtrusive the device, the more reactivity there will be
> (3) motivation for behavior change
> (4) reinforcement and feedback (enhanced reactive effects); and
> (5) reinforcement and/or training for accuracy

Skinner et. al. (1992), are also supportive of the above mentioned variables in order to increase the effectiveness of self - monitoring.

Promoting responsibility for controlling one's own behavior, developing a sense of agency or active learning and motivation, having success with various individuals and problems in various settings and being logistically and economically sound are all reasons which make self - management interventions the subject of much educational research.

Research Findings

Of primary interest are those self - management interventions referred to as self - monitoring (self - observation and self - recording) and self - evaluation. Previous writers (Thoresen and Mahoney, 1974) identify self - monitoring as the major component of self - management training. Spates and Kanfer (1977), indicate self - evaluation to be suggested as the most important self - management component of the self - regulatory model. Table 2.1 displays summary information on those studies which were conducted in the past ten years and reviewed by this investigator. All studies selected included the use of self - monitoring and/or self - evaluating self - management components. Table 2.2 contains a similar table for those studies conducted previous to 1985. The intent of the above mentioned tables is to familiarize the reader with basic information pertaining to the trends and general findings of self - management research.

Self Monitoring Research

The most recent studies conducted on self - monitoring practices have targeted on - task/off - task behavior. Off - task behavior is generally considered behaving in ways that interrupt the classroom program and are counter productive to academic productivity for the student themselves or for others in the classroom. Conversely, on - task behavior relates to paying attention and following teacher instructions as well as displaying appropriate social skills in the classroom environment. Primarily single subject designs have been employed with subjects ranging in age from preschool to adolescence showing self - monitoring to be effective in bringing about significant changes in on - task behavior (DeHaas - Warner, 1991; Ninness, Fuerst, Rutherford & Glenn, 1991; Maag et. al., 1992; Sander et. al., 1991 and Prater, Joy, Chilman, Temple & Miller, 1991). Only one of these studies (Nineness et. al., 1991) included external reinforcement. In most cases, the subjects in these studies attended special education classes and were selected for data collection due to

Table 2.1

Review of Self - Management Research From 1985 to the Present

Author(s)	Subject(s)	Dependent Variable(s)	Self - Management Component(s)	Results
Connell, Carta & Baer (1993)	4 early intervention preschool students having difficulty staying on - task during transitions	Active engagement Competing behavior Recruiting praise Teacher praise	Self - assessment Self - recording	Improved active engagement in training setting only. Generalization to classroom was transient and sporadic
Lazarus (1993)	14 males, 14 females, classified as BD, 11 - 13 yrs., attending special classes	Math scores	Self - monitoring math problems Self - evaluation of math problems Self - charting Self - reinforcement	Immediate and marked improvement in each students' scores
Maag, Reid & DiGangi (1993)	6 LD elementary students (4 grade fours and 2 grade sixes) receiving special education services approx. 1 - 3 hours/day	On - task behavior Academic productivity Academic accuracy	Self - monitoring	Increases in on - task behavior regardless of the target behavior. Support notion that self - monitoring academic outcomes is more effective for academic productivity and accuracy outcomes
Reid & Harris (1993)	28 LD students from 4 school (4 per self - contained classroom	On - task behavior Correct spelling practices Spelling achievement	Self - monitoring of attention Self - monitoring of performance	Both self - monitoring procedures found to be effective but no apparent preference for one over the other - findings inconsistent in this regard

Maag, Rutherford & Digangi (1992)	2 students each in grades 2, 4, &6 - all in special education pull - out programs	On - task behavior Academic productivity	Self - monitoring (on - task behavior only)	Changes in both on - task behavior and academic for each student productivity
DeHaas - Warner (1991)	2 preschoolers	On - task behavior	Self - talk, self - appraisal and self - recording	Decreases in level of disruptive and inappropriate behavior. Improvement in quality of work and a decrease in overall task completion time
Houghton (1991)	Intellectually impaired 6 yr. old boy displaying disruptive behaviors	Disruptive behavior	Self - monitoring appropriate behavior Self - reinforcement with stickers on a chart	Reduced levels of inappropriate behavior, generalizing to the mainstream setting
Ninness, Fuerst, Rutherford & Glenn (1991)	3 males (14 - 15 yrs.) in self - contained special education classroom.	Off - task behavior Socially inappropriate behavior	Self - assessment, self - recording, self - reinforcement and social skills training	In - class behavior of all 3 subjects improved during the course of 5 weeks of self - management training
Prater, Joy Chilman, Temple & Miller (1991)	Five 12 - 17 year olds (1 female, 4 males) classified as LD	On - task behavior	Self - monitoring	Increased on - task performance
Sander, Boh, Hughes & Ruhl (1991)	4 male seventh graders in a public LD unit	Preparation for class Assignment completion Submission of assignments	Self - monitoring, self - evaluation & self - reinforcement	Improved and appropriate levels of behavior for each subject

Kahn (1989)	32 gr. 6 students from 4 math classes ranked as being in lowest 50% of classes with respect to	Appropriate classroom behavior (teacher determined)	Self - monitoring on - task behavior vs. external feedback vs. self - monitoring and external feedback	Self - monitoring with external feedback group experienced a significantly greater increase in on - task behavior than others.
Lloyd, Bateman, Landrum & Hallahan (1989)	5 upper elementary aged special education students	Attention Academic productivity	Self - recording	Improvements in arithmetic productivity and attention to task
Shapiro (1989)	LD adolescents attending vocational - technical school	Problem solving Occupational skills	Goal setting, self - monitoring, self - evaluation & self - reinforcement	Significant positive changes on measures of dependent variables
Smith, Young, West, Morgan & Rhode (1988)	4 junior high students (3 behaviorally disordered & 1 learning disabled)	Off - task behavior Disruptive behavior	Self - evaluation (with back - up reinforcers)	Reduction in disruptive and off - task behavior of all subjects
Wallace (1989)	32 sixth grade students in 4 arithmetic classrooms ranked in the lowest 50% of their classes with respect to time on - task	Appropriate behavior	Self - observation External feedback Self - observation with external feedback	Increases in on - task behavior
Hughes & Hendrickson (1987)	Twelve 4th, 5th, 6th grade students at risk for school maladjustment & academic failure	Attention to task	Self - recording	Improvements in on - task performance

Osborne, Kosiewicz Crumley & Lee (1987)	2 emotionally disturbed children (10 & 16 yrs.) & 3 mentally retarded children (age 10, 11 & 12)	Attention to task Academic productivity	Self - monitoring of attention	Improvement in attention to task to a greater degree than academic productivity for 4 of the subjects
Harris (1986)	4 LD children with significant attentional problems (9 - 10 yrs.)	On - task behavior Academic productivity	Self - monitoring of attention & productivity	Increases in on - task behavior. Inconsistent findings for academic response rate
Merrett & Blundell (1986)	One boy, 13 yrs., placed in a remedial department A class of 8 boys & 8 girls in a remedial group	On - task behavior Work output	Self -recording of on - task behavior	Increased on - task behavior and work output
Rumsey & Ballard (1986)	7 primary school children with behavior difficulties ranging from 9 - 11 yrs.	On - task behavior Writing evaluation	Self -recording	Increased on - task behavior and and number of words written during writing time
Stevenson & Fantuzzo (1986)	3 underachieving 5th grade students	Accuracy of arithmetic problem solving	Self - recording Goal setting Self - reinforcement	Increased arithmetic proficiency for all subjects
Brigham, Hopper, Hill DeArmas & Newsom (1985)	79 students (70% male) in 6th, 7th and 8th grades	Number of detentions Teacher Behavior Rating	Not specified - students were taught a 6 week program using a specific text on applied psychology and managing everyday problems	Effective in teaching the majority of students how to reduce their frequency of detentions

McLaughlin, Krappman & Welst (1985)	4 special education students, 10 - 12 yrs., who typically had low attention to task and negative behaviors	On - task behavior	Self - recording	More students on - task during self - recording than during baseline
Piersel (1985)	3rd grade student (8 yrs.) referred for not completing assignments and slight behavior problems	Assignment completion in various subjects	Self - monitoring completion of assignments	Substantial increases in completion rate
Rooney, Polloway & Hallahan (1985)	7 LD elementary students in a self contained class having the most severe attentional problems	On - task behavior Academic achievement	Self - monitoring attention and math accuracy	Consistent improvement in the amount of on - task behavior for subjects. 3/4ths had substantial increases in math accuracy

the severity of their off - task behavior in comparison to their peers. The majority of subjects tend to be male.

Although not as popular, productivity or academic achievement has also been the target for self - monitoring, either alone or in conjunction with the self - monitoring of on - task behavior. Hoge and Andrews (1987) discuss the issue of target selection and suggest that because altering classroom behavior may not necessarily positively affect academic achievement, that targeting academic achievement itself is more likely to bring about change in this area. These writers state that academic achievement remains a key concern for our schools where " learning ... and acquisition of academically relevant skills are important goals in the development of competent children and adults" (p. 228). Their argument is that quite often, researchers assume that classroom behavior targets are casually linked to achievement but that the links may actually not be that significant. In their review, researchers were able to show that "contingencies directed toward academic performance produced changes in both academic criteria and behavior criteria". Hoge and Andrews claim the findings for behavioral interventions to be "less positive" meaning that many studies using behavioral interventions fail to lead to significant changes in performance outcomes as well as behavioral ones. Attention, however, is thought to be highly correlated with academic achievement where effective attention calls for knowledge of what is relevant (Snider, 1987). In this sense, Snider explains the failure of self - monitoring of attention to produce significant academic gains may be more of a problem of how attention is perceived whereas "knowing what to pay attention to" would be more effective. Attention then "will only benefit students who have already acquired the academic skills necessary to perform a given task" (p.149). Hallahan and Sapona (1983) and Hallahan et. al. (1983) agree with this latter statement as, even though students may know how to pay attention, the posession of skills to complete required tasks is important. Hallahan and Sapona (1983) state quite clearly what they do know from their research regarding the self - monitoring of attention. That is "self - monitoring of attention in inattentive learning disabled children does increase attention and academic productivity" (p. 620). Rooney, Polloway and Hallahan (1985) found that self - monitoring both attention (on - task behavior) and academic performance proved to be a better intervention for low IQ learning disabled students. Harris (1986) found an increase in on - task behavior over baseline during both self - monitoring of attention and self - monitoring of productivity. Her research however, was less clear for academic response rate under either condition. Subjects in this case tended to show more variability with respect to their productivity levels when self - monitoring attention or productivity. Reiter, Mabee and McLaughlin (1985) stated that their findings "appeared to support the notion that monitoring on - task behavior improves academic responding" (p. 51). Although not as consistently found in their study, Osborne, Kosiewicz, Crumely and Lee (1987) found the self - monitoring of attention to be successful in improving the performance of 4 out of 5 special education students. In their study however, there was a more consistent finding for increased on - task attention. In their research, Lloyd, Batemen, Lundrum and Hallahan (1989) found clear changes in productivity for all subjects when self - recording procedures for attention and productivity were introduced. Their research showed no clear superiority for either procedure but they did indicate a trend toward better performance under self - recording of attention. This research shows the comparison of attention and productivity monitoring as being unclear. Researchers do state that, although the two treatments are not equally effective, "the differences are not consistent enough to warrant favoring one intervention over the other" (p. 320).

There appears to be somewhat of a debate in the literature regarding the superiority of behavioral versus academic productivity targets in self - monitoring research. It seems that positive results are obtained in both cases and that what remains unclear is which is most effective in terms of academic performance outcomes where the data for academic productivity is found to be not as dramatic. It would seem beneficial then, that the appropriate target behavior should enhance the academic purposes of the classroom as well as provide for behavior management (Lentz, 1988). This research project was interested in those self - management practices which are likely to be effective for a variety of students both academically and behaviorally and hence, took into consideration both behavioral and academic response targets.

Self - Evaluation Research

Research on the single self - management component, self - evaluation, appears to be very limited and sporadic. By far, the majority of the research tends to focus on self - monitoring techniques either solely or in combination with other self - management techniques. Self - evaluation is usually researched in conjunction with other self - management components or with some type of reinforcement contingency plan. One study which examined the effects of self - evaluation alone (not including any other self - management strategy) was conducted by Smith et. al. (1988). Three male students (classified as behaviorally disordered) and one female student (classified as learning disabled) ranging in age from 13 to 15 years participated. The subjects were selected because of their high rates of disruptive and off - task behaviors as reported by various school personnel. Off - task and disruptive behaviors made up the one category of behaviors selected for intervention. With no prior experience with a systematic behavior management system, these 4 students were trained in self - evaluation with the resource teacher in a resource room. Students rated their behavior on a 0 - to - 5 point scale according to how closely they followed the class rules. A matching system for teacher - student ratings was utilized for awarding points. Points could be exchanged for tangible reinforcers (e.g. snacks, supplies, magazines) at the end of the day. The treatment was found to be effective in reducing off - task and disruptive behavior in the resource classroom. Generalization attempts however, to the regular classroom were not successful when the same program was implemented there. The investigators attributed this largely to the noncompliance of regular classroom teachers, who , in general "were either unwilling or unable to implement the procedures even though the requirements placed on the teachers' time were minimal" (p. 239). Drabman, Spitalnik and O'Leary (1973) had carried out essentially a very similar investigation with the exception of initially using an external contingency plan. This study showed that disruptive behavior could be brought under control with a teacher - administered token program and then maintained by teaching target students (8 males, 9 to 10 yrs. old) to self - evaluate. After implementing the token reinforcement program (where the teacher rated students and awarded points) students were taught to self - evaluate their behavior and award points which had to match that of teachers. During the fading process of this study, the number of students required to "match" the teacher ratings was gradually decreased until matching procedures ceased. The final phase of the study had students self - evaluating without teacher feedback while also awarding themselves points. Teachers continued to praise general matching and honesty whereas "marked" over evaluation received only occasional reprimands. The results were that appropriate behavior was maintained even after all checking of student evaluations was eliminated. Hence, students were self - managing effectively with very little demands placed on the teacher. An earlier study involving a self - evaluation token system as well was conducted by Wood et. al. (1978). These investigators examined the effect on room - cleaning behavior of 6 pre delinquent male youths in a residential rehabilitation program. Effects of a self - evaluation plus token system were compared with the effects of an external token system only. Exactly how subjects self - evaluated with respect to a rating scale was not provided by the investigators. The researchers concluded that self - evaluations were effective in increasing and maintaining room - cleaning behavior for all youths whereas with the external token conditions, the behaviors increased but returned more rapidly to near baseline levels when consequences were not given. When the self -

evaluation conditions were terminated, an "adequately long test of resistance to extinction on performance standards" (p. 511) occurred. Therefore, although just as effective as external token systems in producing behavior changes, self - evaluation in conjunction with a token system appeared to be more effective in producing maintenance effects over time. In a considerably more complex analysis, Rhode, Morgan and Young (1983) investigated the generalization and maintenance of treatment effects using self - evaluation procedures in conjunction with a token system. Fourteen experimental conditions were used involving elaborate self - evaluation matching conditions and fading procedures with 6 behaviorally handicapped elementary students referred for excessive classroom behavior problems. Training occurred in a separate resource room while generalization phases and treatment occurred in the regular classrooms in which the students were placed for the majority of the school day. Self - evaluation entailed rating one's self on a 0 to 5 point scale regarding compliance to classroom rules and percentage of work done correctly. Points could be exchanged for such tangible reinforcers as small toys, candy and other snacks. The results of this investigation found self - evaluation to improve student behavior which was able to generalize to and be maintained in the regular classroom using a significantly less intensive version of the original self - evaluation procedure. The investigators claimed the self - evaluation procedure to be responsible for "reducing the variability of student behavior in their regular classrooms" (p. 185). It is interesting to also note that the accuracy of self - evaluation was found to "not be a critical factor in obtaining desired behavior changes and that the experience of using self - evaluation in itself may serve a useful function in facilitating the maintenance of the treatment gains when all intervention has been terminated" (p. 186). Bolstad et. al. (1972) also found self - evaluation with a points system for back up reinforcers to be effective in establishing and maintaining reductions in disruptive behavior. Their findings showed this to be the case for an externally managed evaluation and token system as well. One study finding self - evaluation to be ineffective in decreasing disruptive behavior (Santogrossi, O'Leary, Romanczyk and Kaufman 1973) did not incorporate the use of back - up reinforcements for points awarded. Students rated themselves on a 0 to 2 point scale with respect to adherence to class rules and then awarded themselves the corresponding point value. There was no further consequence to the accumulation of points. This condition lasted for six days at which time a teacher - determined points with back - ups phase was introduced. The self - evaluation phase was found to not "substantially" decrease the rate of inappropriate behaviors whereas the conventional token program produced a dramatic decrease.

Other investigations making use of self - evaluation in the treatment program have essentially imbedded this component of self - management amongst other components. For example, Shapiro (1989) used a 30 - unit self - management program across 15 weeks. Specific lessons were taught on goal - setting, self - evaluation and self - reinforcement. Students were also required to develop and implement a personal self - management plan. Students were also initially taught the basics of A (antecedent) - B (behavior) - C (consequence) relationships. Sander et. al. (1991) used a self - management program utilizing a program entitled "Self - Management Strategy" which self - evaluation of performance was step 4 of 5. Lazarus (1993) had students self - evaluate as well as self - monitor, chart self observations and self - reinforce. Self - evaluation however, referred only to the correctness of math problems as was the case in the study by Spates et. al. (1977) utilizing very similar self - management components. With respect to these types of studies, the effect of self - evaluation is not easily discernible from other self - management components. These studies however, due lend support to the inclusion of self - evaluation procedures in a self - management program.

In review, it appears that self - evaluation procedures, in conjunction with an elaborate rating system involving points and tokens, are effective in bringing about desired change in student behavior. The advantage of utilizing this type of self - management approach within

Table 2.2

Review of Self - Management Research Studies Conducted before 1985

Authors	Subject(s)	Dependent Variable	Self - Management Component	Results
McLaughlin (1984)	12 behaviorally disordered elementary students diagnosed as behaviorally disordered, enrolled in self-contained education classroom managed by token reinforcement system	Assignment completion, On - task behavior behavior, Accuracy of self - recording	Self - recording study behavior with and with - out back - up reinforcement	Increased academic out - put and on - task behavior in both treatments - stronger for on - task behavior, reinforcement produced higher levels than self - self - monitoring alone
Rooney, Hallahan & Lloyd (1984)	4 target children in a class of 14 , identified because of severity of attention problems. Entire class used self - recording	Percentage of time on - task	Self - recording Self - recording with reinforcement	Increases in on - task behavior for all subjects in all conditions Reinforcement led to even higher levels of attention
Stevenson & Fantuzzo (1984)	Two 5th grade males in a regular classroom with a history of not completing assignments and disruptive behavior	Math performance, Disruptive behavior	Self - recording # of math problems completed accurately, Self - evaluating, Self - reinforcement Goal setting	Effective in increasing accurate math performance and positive effect on disruptive behavior Results suggestive of academic contingency being more resistant to extinction

Rhode, Morgan & Young (1983)	6 behaviorally handicapped elementary students in 1st to 5th grade, ages ranging from 6 to 10	Appropriate classroom behavior	Self - evaluation with a token reinforcement	Improved behavior which was generalized to regular classroom using less intensive self - evaluation. Reduced variability of student behavior in regular class
Hallahan, Lloyd, Kneedler & Marshall (1982)	8 yr. old LD boy in a self - contained special ed. class with 9 other children Identified as having the most difficulty attending to task	On - task behavior, Arithmetic productivity	Self - monitoring on - task behavior, Teacher assessment with student	Immediate and dramatic increases in % of on - task behavior with self - assessment being superior to teacher assessment with feedback. Results for academic productivity were in the same direction but not as dramatic
Lloyd, Hallahan, Kosiewicz & Kneedler (1982) Experiment 1	9 yr. old male identified as LD, enrolled in a self - contained LD class with 9 others 8 to 11 yrs. old	On - task behavior, Academic productivity	Self - assessment, Self - assessment with self - recording of on - task behavior	Higher levels of attention to task. No difference noted between two treatments. Generally, productivity was increased and both treatments equally effective in this regard
Lloyd, Hallahan, Kosiewicz & Kneedler (1982) Experiment 2	3 elementary LD students in a self - contained classroom.	Same as above.	Same as above	Self - assessment did not produce beneficial effects. Self - recording heightened attention to task behavior

Workman, Helton & Watson (1982)	4 yr. old preschool male referred due to low rate of appropriate work behavior and low compliance to instructions. Teacher and teacher aide present	Sustained schoolwork, Compliance	Self - monitoring on - task behavior only	Effective in increasing sustained school work behavior
Hallahan, Marshall & Lloyd (1981)	3 LD males in a self - contained LD class, with severe attentional problems. (10 students, a teacher and aide)	Time on - task	Self - recording	Improvement in on - task behavior
Roberts & Nelson (1981)	Three, 3rd grade boys in separate classes. Selection Selection based on high rates of passive off - task behavior	On - task behavior, Completion of arithmetic problems and accuracy of problems	Self - monitoring of on - task behavior and accuracy of arithmetic problems	Improvement in on - task behavior No significant difference in accuracy as a function of either procedure. Completion rate results variable
Fantuzzo, Harrell & McLeod (1980)	Two 3rd grade males with learning and behavior problems. One served as target child and the other the generalization child	Attentive behavior	Self -observation, Self - evaluation & Self - reinforcement	Both subjects increased attentive behavior during target subjects self - regulation treatment (demonstrating across subject generalization)

Piersel & Kratochwill (1979)	7yr. old grade 2 female who failed to complete school assignments	Phonics performance	Self - recording scores	Positive improvements in target behavior for all subjects (other previous interventions by school staff had proven unsuccessful)
	13 yr. old 7th grade male with disruptive behavior	Disruptive behavior	Self -recording # times teacher requests subject to be quiet	
	9 yr. old 4th grade hyperactive girl	Interruptions	Self - recording number of interruptions	
	15 yr. old 9th grade hyperactive male	Math and Language Arts performance	Self - recording rate and accuracy of math problems, Self - recording of SRA units completed in L.A.	
Sagotsky, Patterson & Lepper (1978)	67 children in 5th and 6th grades receiving individualized math instruction program using standardized units	On - task behavior, Academic behavior	Goal setting, Self - monitoring on - task and a combination of the above	Self - monitoring alone proved to be most effective for on - task behavior and achievement
Wood & Flynn (1978)	6 pre delinquent male youths in a residential program (10 - 15 yrs.)	Room - cleaning behavior	Self - evaluation token system	Increased and maintained room - cleaning behavior for all youths
Spates & Kanfer (1977)	45 1st grade students who failed to pass minimum arithmetic requirements	Arithmetic performance	Self - monitoring, Self - evaluation of math problems Self - reinforcement (verbal), Criterion setting with self - monitoring	Self - monitoring alone did not change performance significantly. Criterion setting found to be "critical" for effectiveness

Nelson, Lipinski & Black (1976)	14 college students in a continuing education course on behavioral principles	Face - touching	Self - recording frequency of face - touching	"Reactive effects" of self - recording to decrease frequency of face - touching
Ballard & Glynn (1975)	14 subjects randomly selected from a class of 37 grade 3 students who all engaged in treatment	Number of sentences in stories # of different describing in stories On - task behavior	Self - monitoring sentences and describing words. Self - reinforcement after 8 days	Self - monitoring alone did not modify writing behavior. Self - monitoring and self - reinforcement for action words received highest qualitative ratings Study lends support to ease of implementing class wide system as students were found to self - manage with minimal external supervision
Turkewitz, O'Leary & Ironsmith (1975)	Eight 7 to 11 yr. olds in an after school adjustment class for academic and social problems, matched with 8 others in same program	Mean # of disruptive behaviors Reading skills	Over a period of 4.5 months, self - evaluation using 5 point scale for behavior and academic work versus a teacher token system	During self - evaluation without matching and reinforcement, disruptive behavior rose slightly. Dramatic decreases with token system. No significant differences in academic gains
Broden, Hall & Mitts (1974)	Female 8th grade student Male 8th grade student	Study behavior talk - outs	Self - recording study behavior Self - recording talk - outs	Significant increase in study behavior Talk - outs decreased to well below baseline levels
Glynn & Thomas (1974)	9 children regarded as difficult to manage, selected from regular gr. 3 class	On - task behavior	Self - monitoring on - task behavior and self - reinforcement	Self - control plus cueing resulted in much stronger increase in on - task behavior. Procedure applicable to entire class

Drabman, Spitalnik & O'Leary (1973)	Eight 9 to 10 yr. old males in an adjustment class for academic and emotional problems. Described as very disruptive, selected for after school treatment program	Mean # of disruptive behaviors Daily reading progress	Self - evaluation with token reinforcement. Faded matching procedure	Improvement of behavior even after matching not required Attribute success to self - evaluation due to continual teacher praise and peer reinforcement. Academic skills improved
Glynn, Thomas & Shee (1973)	8 grade 2 children randomly chosen from a class of 37	On - task behavior	Self - monitoring on - task behavior after externally administered token procedure	Children could successfully use self - control procedures to maintain high rates of on - task behavior
Lovitt (1973)	9 yr. old regular 4th grade female	Talk - outs	Self - monitoring talk - outs	Decrease in talk - outs
	2nd grade male	Rate of hitting	Self - monitoring hitting considerably	Rate of hitting dropped
Santogrossi, O'Leary, Romanczyk & Kaufman (1973)	9 adolescent male psychiatric hospital residents participating in an after school reading class Reading deficits and high levels of disruptive behavior	Disruptive behavior	Self - evaluation with points only being awarded versus teacher determined points with back - up reinforcers	Self - evaluation not substantially effective
Bolstad & Johnson (1972)	38 grade 1 and 2 subjects chosen for disruptive behavior	Disruptive behavior	Self - evaluation with with reinforcement	Both external and self - regulated procedures were effective in establishing and maintaining reductions in disruptive behavior

a token system as compared with teacher - managed approaches appears to be in maintenance benefits. Self - evaluation procedures may make the desired behavior changes more resistant to extinction when fading of token programs occurs. The self - evaluation process then, may become a cue for students to maintain their appropriate behavior while only verbal reinforcement rather than tangible reinforcement is provided.

Summary

In general, the majority of the self - management research has most often targeted on - task or disruptive behavior and, to a lesser extent, academic productivity using time - series designs with multiple baselines for single subjects. Between - group designs are utilized very infrequently. In cases where all students in a regular classroom have taken part in a self - management intervention, only selected students are targeted for data collection. In most cases, those individuals rated to be the "worst " with respect to the dependent measure(s) are selected for intervention and quite often this appears to occur in self - contained special education classrooms with more personnel and lower student - teacher ratios than is typical of regular classrooms.

Self - management procedures have proven to be effective in changing classroom behaviors by means of increasing appropriate or decreasing inappropriate social behavior, as well as improving academic performance. Therefore, the efficacy of self - management procedures for promoting the social and academic behaviors of children and youth is supported.

Problems With Self - Management Research

Although self - management interventions appear very attractive, review of the research has illuminated numerous problems ranging from the terminology used to confounding variables in experimental designs.

Cole (1992) describes the "liberal use of the term self - management to refer to different intervention packages that vary greatly in the number of actual self - management components included" (p. 189) as a problem. In a recent review, Panagopoulou - Stamatelatou (1990) also found that "various authors have used the technical terms freely and without much consistency" (p.219). The definitions provided at the beginning of this literature review represents an attempt to clarify the meaning of self - management. There are numerous interventions that collectively are considered self - management techniques. Therefore, one study in self - management may consists of very different components compared to another study in self - management. The variability among the research with respect to the components of self - management included, combinations, and/or order of delivery, make it very difficult to assess the best practices in self - management interventions.

Although self - management interventions have been used successfully in non - school settings across a wide range of behaviors, there are researchers (Fantuzzo et. al., 1990; Fantazzo, Rohrbeck and Azar, 1987), who believe this is not the case in school settings. They feel self - management interventions in school settings have targeted only a narrow range of academic or disruptive behavior. The problem may be more of a focus on "special education" students and/or populations where successful classroom applications of self-management procedures have taken place in remedial or resource classrooms and with extreme samples of subjects (e.g. those students exhibiting the most disruptive or least productive academic behaviors within special and/or regular classrooms). According to Cole (1992) "there may be practical problems associated with implementation of self - management interventions on a classwide basis" (p. 190). There appears to be a need for more research on a (regular) classroom wide basis. McLaughlin (1976) also recognized this need almost two decades ago where he felt self - management training procedures needed to be developed and replicated with public school populations approximating in number the typical class load that a teacher has. Cole et. al. (1992) indicate self - management interventions as having substantial research support but currently they are not being widely used in the schools. Fantuzzo et. al. (1992) explain the crux of the problem being that self - management approaches do not "fit" the classroom as a whole. Essentially, in their veiw, teachers can not be expected to design 30 or more intensive, individual self - management programs and to treat them as orthogonal single - subject experiments due to the complex classroom behavioral system where teachers are required to meet educational objectives while handling hundreds of teacher - student and student - student classroom interactions daily. Of course, many teachers would give their support to this being the case.

Another problem with self - management interventions has been the claim of maintenance and generalization effects of behavior changes incurred during such interventions. Here, Cole (1992), states that "although the research on generalization is promising, it is extremely limited and many questions remain unanswered" (p. 190). Again, Cole et. al. (1992) find it difficult to support the claim that self - management should promote generalization given the lack of evidence in the literature where few studies have actually measured generalization. McLaughlin (1976) found the maintenance of self - control to appear to be "enhanced by prior exposure to external reinforcement and appropriate fading procedures"(p. 654) but that even this required further follow - up research. Although there are numerous reasons that are appealing and logical for using self - management techniques, maintenance and generalization of treatment effects are not so clear (Carter, 1993). Carter continues on to state that "although it would seem that self - management is the most promising of all techniques for promoting generalization and maintenance of behavior change, the effects of self - management over time, settings and individuals have not been addressed adequately in the literature" (p.29). Nelson, et. al. (1991) also cast doubt on the generalization effects of such procedures due to inconsistent findings on the "spontaneous" generalization of treatment effects. Generalization that is systematically programmed however, appears to be found more consistently.

Other problems such as experimental designs and confounding variables appear frequently in the self - management research. With respect to the many studies using time - series , within subject designs, there is a problem with returning to baseline levels of behavior in such a cognitive - behavioral interventions (in which a change in cognitions is desired). Because cognitons are supposedly changed, a return to baseline levels of behavior cannot be expected to occur after the treatment intervention (Snider, 1987). Other alternative experimental designs controlling for this factor would be those utilizing multiple baselines and alternating - treatment designs as well as between - group studies. Numerous studies have additional independent variables besides self - monitoring or self - evaluation. Self - instruction training, token systems, teacher assessment, contingent and non contingent reinforcement, self - reinforcement, cost - response procedures, self - goal setting etc. produce confounding effects. This leads to some researchers (O'Leary & Dubey, 1979, Baer, 1984) questioning the efficacy of such investigations.

Locus of Control

This study attempted to add empirical support to the effectiveness of self - management interventions to enhance perceptions of internal control. "Several decades of research have demonstrated that an important contributor to school performance is an individual's expectations about whether he or she has any control over academic successes and failures" (Skinner, Wellborn and Connell, 1990, p. 22). The construct of locus of control was chosen for measurement in order to determine if, in fact, self - management interventions do promote the important development of internal orientations (believed to be the case by many researchers previously discussed). Because of the focus on student responsibility and control, self - management interventions are expected to affect locus of control.

Perceived control has long been the topic of interest to researchers in the fields of psychology, personality and social learning theory. The perception that one's control is either internal or external developed out of social learning theory as an integration of behavioral and cognitive psychological theories (Rotter, 1975). In his clinical analysis, Rotter observed individuals to either change their behavior as a result of new experiences or to discount new experiences by attributing them to chance or to others and not to their own behavior or characteristics. This led to the development of Rotter's classification of individuals according to the degree to which they accepted personal responsibility for what happens to them. This construct - locus of control - is considered a generalized expectancy of reinforcement which operates across a large number of situations (Rotter, 1975). Essentially, those who recognize the contingency between their behavior and the outcomes they experience have internal control orientations. In contrast, individuals with external control orientations believe that they are powerless and that what they do is unconnected to anything that happens to them.

> "Internal control refers to the perception of positive and/or negative events as being a consequence of one's own action and thereby under personal control. Whereas external control refers to the perception of positive and/or negative events as being unrelated to one's own behavior in certain situations and therefore, beyond personal control.
> (Rotter, Seeman and Liverant, 1962, p.499)

The concept of locus of control was formulated as a continuum with a range from highly internal perceptions of control through to highly external perceptions of control which are dependent on one's expectations about the control of reinforcements for actions.

The relationship between perceived locus of control and other personality characteristics has been the focus of numerous studies. Spaulding (1992) believes the correlates of an internal control orientation have been shown fairly conclusively in the research literature where an internal control orientation is positively related to academic achievement, grades, persistence or effort and, task attentiveness. Gruen, Korte and Bains (1974) for example, found locus of control scores for grade two, four and six students to be "significantly related to grade point averages" (p. 683) where internal orientations were more frequent at higher grade point averages. Gordon, Jones and Short (1977) administered a locus of control measure to third and sixth grade students. They found "children who believe that they themselves have control over their environment (internal) achieve higher levels of academic success than children who believe that their lives are controlled by external or chance forces" (p. 1716). They found that internals, in general, had greater task persistence than external which may, in part, explain the often reported locus of control - academic achievement relationship. In Lefcourt's (1982) review "internals have been found to be more perceptive to and ready to learn about their surroundings. They are more inquisitive, they are more curious and efficient processors of information than are externals" (p. 80). While controlling for ability, there seems to be some successful prediction of achievement in early grades as a function of attitudes toward internal versus external control (Rotter, 1975). Nunn and Parish (1992) found at - risk students to differ from their peers on several psychosocial dimensions, one of these being locus of control. At - risk students were found to be more externally oriented by indicating a greater tendency toward believing that behavior had little effect upon outcomes. Skinner et. al. (1990) present somewhat contradictory findings where it was implied that "beliefs about internal causes do not seem to promote motivation although, beliefs in external causes do seem to undermine it" (p.29).

The proliferation of research on the characteristics of internals and externals as personality types has put the validity of the construct under question as a result of some conflicting findings. For example, Lefourt (1982) states that the empirical data on the locus of control - achievement relationship is often not without paradoxical inconsistencies or failures at replication. It seems that Rotter's theoretical formulation of internal - external locus of control may have been too simplistic and that it may be a mistake to assume that an externally oriented person is the opposite of an internally oriented person. A weakness in the construct of locus of control appears to be the definition of external orientation and subsequently questions the support for the conceptualization of the construct as a continuum. Rotter (1975) explored the possibility of there being more specific subconcepts or subscales within the I - E scale, especially for external orientations. Skinner et. al. (1990) choose to not deal with internal - external control as bipolar dimensions and instead, introduced a new feature, namely, unknown source of control. This aspect of control was defined as "the extent to which children report that they do not know the causes of school performance" (p. 23). Generally, it has been accepted that an internal orientation is desirable. "When people believe that they have responsibility for some action, that a successful outcome is due to personal competence, that the behavior is voluntary and not controlled by external threats or rewards, they tend to learn more easily, to be more highly motivated, and to report more positive feelings than when operating under perceived external pressures" (Kanfer et. al., 1991, p.319).

Studies have been conducted in which a change in locus of control has been achieved as a result of various interventions. With respect to the claims of promoting the development of an internal orientation (locus of control), none of the studies reviewed had assessed this aspect of self - management interventions involving self - monitoring/evaluating. One study using another type of cognitive behavior modification intervention, however, did assess this variable. Manning (1988) found that using cognitive self - instructional strategies to guide and control behaviors in first and third graders resulted in children becoming more internal in their locus of control beliefs. Therefore, with respect to the current study, it was conceivable that the self - management intervention program implemented would foster the development of expectancies about attribution of causality reflecting an internal locus of control.

CHAPTER III. RESEARCH METHOD

Research Design

A pretest - posttest control - group experimental design was utilized to explore the magnitude of change produced by a self - management program at the grades 4 and 6 level. Both treatment and control groups completed all pre and posttest measures. Only the treatment group at each level received the self - management program. The control group teachers had no specific information regarding the investigators research to be conducted other than that the pre and posttesting information was required. The grade 4 treatment group teacher chose to implement the program in a math class and therefore, pre and posttesting occurred in math classes for the grade 4 groups. The grade 6 treatment teacher elected to implement the self - management program in a Language Arts class. Pre and posttesting, therefore, was completed during language arts classes for the grade 6 groups. The study was conducted over a period of 5 weeks. Pretesting occurred during the last week of April and the treatment program began the first week of May and ended the first week of June. Quantitative analysis was the major methodology employed to interpret the experimental results with limited qualitative data being supplemental.

Subjects

Subjects attended a K - 9 school in an urban public school system having a population of approximately 600 students. Two grade 4 and two grade 6 classes were chosen to participate in the study. All four teachers involved agreed to take part and were arbitrarily assigned to be the control or experimental groups.

Both grade 4 classes consisted of 28 students to start and both concluded with 24 subjects in the study due to the removal of those individuals who were absent during crucial parts of the study. The original placement of students into either class was done by previous grade teachers with the intention of having two grade 4 classes being relatively homogeneous in comparison to one another. The grade 4 control group, (4C), consisted of 13 male and 11 female subjects. The grade 4 experimental group, (4E), consisted of 13 male and 11 female subjects as well. Academically, both groups were comparable where their group achievement test scores on the Canadian Achievement Tests was within the average range. The grade 4E group mean was at the 48th percentile while the grade 4C group mean was at the 55th percentile. This test was administered at the beginning of the school year in September. No major differences in teacher management, discipline or methodological approaches were apparent.

The grade 6 control, (6C), group consisted of 27 students, while the experimental group,(6E), consisted of 28 students. Again, due to absenteeism, students were excluded from the study leaving both groups with 25 subjects. A male and female were removed from the control group leaving 14 females and 11 males in the study. Three students, 2 male and 1 female were removed from the experimental group leaving 14 females and 11 males as well. Therefore, the exact same female/male ratio existed in both the grade 6 control and experimental groups. As with the grade 4 classes, the grade 6 students were placed by previous grade teachers to ensure homogeneity between the two groups. Teacher management, discipline and methodological approaches were found to be relatively consistent between classes. Both groups covered the same curriculum material in numerous classes and enjoyed many shared curriculum related field trips throughout the school year. Academically, the two groups were found to be very similar with respect to their average marks in the core area in which the treatment was to occur (Language Arts). The control group had a 75% average at the start of the study whereas the experimental group had a 77% average to start. Both groups scored within the average range on the Canadian Achievement Tests administered in the early fall as well. The grade 6E mean average was at the 57th percentile while the grade 6C average was at the 52nd percentile.

All subjects in this study attended regular classrooms with no access to any type of intervention such as special education classes or remedial programs.

Experimental Treatment

For both control and experimental groups, the target behaviors discussed and defined operationally in order to facilitate self - assessment on pre and posttest measures were as follows:

a) *on - task behavior* - described as being engaged in appropriate behavior and/or activities which were essentially those approved by the teacher. On - task meant doing what the teacher had instructed students to do. Behaviors considered to be off - task were discussed such as, talking during work or quiet times, disrupting the work of others, being out of seat at inappropriate times and not working on assigned tasks

b) *listening to the speaker* - described as being attentive to the person talking, be it the teacher or another classmate. Overt behavior such as maintaining appropriate eye contact, not fidgeting or playing with objects etc. were discussed as being consistent with listening to others. Non - listening types of behaviors were described as including talk - outs, interruptions, limited or no eye contact with the speaker, playing with or looking for objects, etc. (Anyone of these behaviors by itself does not imply listening, rather, it is the combination of these behaviors that would be highly conducive to listening)

c) *effort on assignments* - described as doing things such as proof reading school work to ensure accuracy. Making sure work was completed in a neat and organized manner reflecting adequate time and energy put into completing it was discussed as an important aspect.

d) *assignment completion* - referred to the amount of the assignment completed. Students would rate themselves as having completed all of the assignment, half or more of the assignment or, half or less than half of the assignment.

Both control and experimental groups received whole class discussion to ensure understanding of the definition of target behaviors. Role playing techniques and concrete examples were used to review the definitions. Students had no difficulty comprehending the intended meanings of the target behaviors. Both control group and experimental group teachers were present during such discussions in their classrooms. Reference can be made to Young, West, Smith and Morgan's (1991) discrimination training and role - play (p. 57) for a more detailed account of exact procedures for this aspect of the treatment.

The experimental groups targeted to benefit from the treatment were taught to engage in effective self - management behaviors. In doing so, the guidelines of Carter (1993) and Workman (1982) were followed which included; 1) teaching the students how to use the self - management system, 2) implementing the system and 3) evaluating the effectiveness of the system. Target behaviors and definitions were the same as those used to complete the self - rating pretest. Instruction was provided on how to use the data collection system to be employed. Each subject received a file folder with her/his name on it containing copies of the data record form to be maintained throughout the study. Enough forms to cover approximately five weeks of self - management were stapled to the inside of the folders. Figure 3.1 shows the self - evaluation form used by both grades 4 and 6 experimental groups.

For the listening and on - task target behaviors, students were to rate themselves on a three point scale ranging from 1 to 3. A rating of "1" indicated the best possible rating, one of "excellent," meaning that the student almost always engaged in this behavior. A rating of

NAME:

DATE	LISTENING	ON-TASK	ASSIGNMENT COMPLETED	EFFORT
MONDAY				NO__ PR__
TUESDAY				NO__ PR__
WEDNESDAY				NO__ PR__
THURSDAY				NO__ PR__
FRIDAY				NO__ PR__
MONDAY				NO__ PR__
TUESDAY				NO__ PR__
WEDNESDAY				NO__ PR__
THURSDAY				NO__ PR__
FRIDAY				NO__ PR__

Effort

NO = Neat And Organized

PR = Proof Read For Mistakes

Assignment Completion

1 = All Completed

2 = More than half completed

3 = Half or, less than half completed

1 = Excellent

2 = Satisfactory or Good

3 = Needs Improvement

Figure 3.1 Self - Management Record Form

"2" indicated that performance was "good" or "satisfactory" with the student usually engaging in this behavior. Students were instructed that if they received minor feedback from the teacher (verbal or nonverbal) as to their noncompliance on one or two occasions, this would be a "2" rating . A rating of "3" was the lowest possible and indicated that improvement was needed in this area as the student usually did not engage in this behavior. With respect to evaluating assignment completion, students used the same three point rating scale. An excellent rating of "1" indicated the whole assignment had been completed. A rating of "2" was satisfactory meaning that more than half of the assignment was completed. The lowest rating ("3") meant that half or less than half of the assignment had been completed and improvement in this area was needed. For effort, students were required to monitor whether they did or did not complete their work in a neat and organized manner and whether they did or did not proof read their work before handing it in for marking.

The three point rating scale described above was chosen in order to be consistent with a similar rating scale already in use on report cards with respect to work habits. Teachers felt that students were familiar with this type of rating scale and would therefore, be more inclined to use it accurately without confusion compared to introducing students to a different scale. Students and teachers discussed what would be considered a rating of 1, 2, or 3 in each target area to increase the accuracy of student self ratings and teacher ratings of students.

The experimental groups were to self - evaluate/monitor on a daily basis at the end of a 40 minute period. The grade 4 experimental teacher had elected to have students self - manage during one math class a day whereas the grade 6 experimental teacher elected to do so during one language arts class. The time interval for self - management was therefore, one 40 minute class. In all cases, the period in which the self - management took place occurred in the morning. Teachers were instructed to review student self - evaluation/monitoring on a daily basis to provide feedback to students regarding their accuracy. Students were made aware that the teacher would be commenting on the accuracy of their self - evaluation/monitoring. Teachers would indicate on the student record form their own perceptions of how students performed. Discrepancies would be noted by using a "+" sign for self - ratings the teacher felt were too high or a "-" sign for those the teacher felt were too low. Teachers were also instructed to provide positive verbal praise on a daily basis to all students for self - managing and doing so accurately. At the end of each week, students could color in the happy face at the bottom of each column if they accurately self rated themselves to be excellent for each consecutive day (or in the case of effort, checked off that they had completed work neatly, in an organized manner and proof read it). For example, if a student accurately rated themselves as excellent on "listening to the speaker" each day of the week they self - evaluated, they would color in a happy face at the bottom of the column for this target behavior.

With teacher input, the record forms were constructed so as to allow students to see how they rated themselves on a daily basis for each week. They were also able to see how they had been self evaluating/monitoring themselves on a weekly basis. Teacher feedback on the self - evaluation process was to be as immediate as possible, however, given time constraints due to various logistical factors, teachers found it more convenient to indicate their feedback (if discrepant from students') at the end of the day. Students would then receive their feedback the following day when file folders would be distributed at the beginning of the class they would be self - evaluating/monitoring in. The file folders containing the self - evaluation/monitoring record forms then, became convenient cues to students to carry out the self - management techniques.

Other procedures

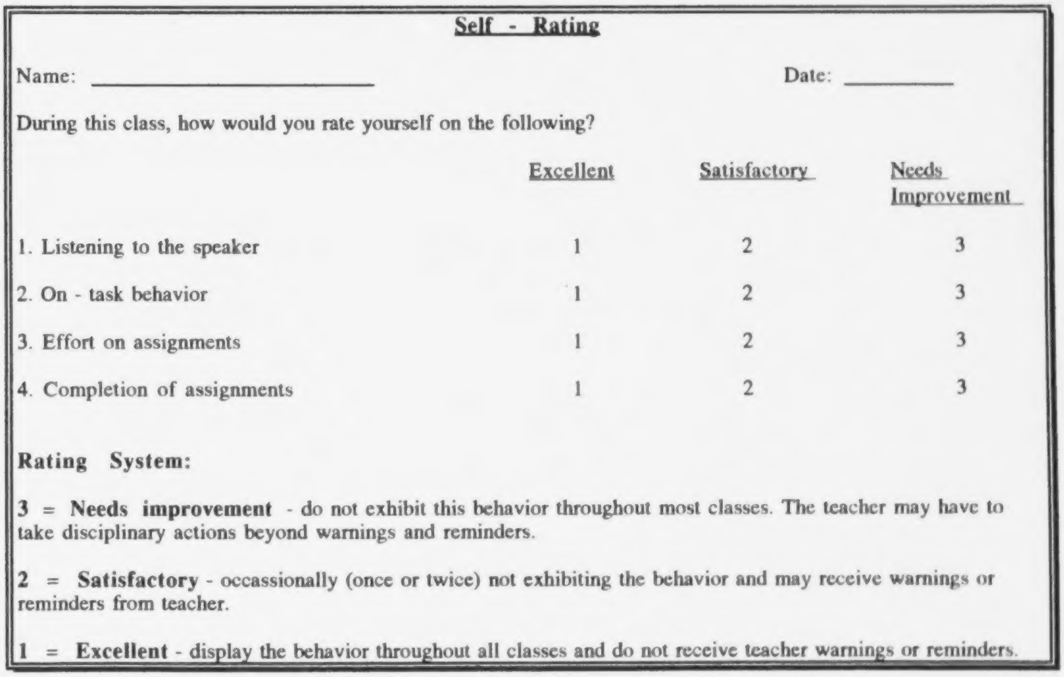
After approximately one week of implementing the self - management program as described above, both experimental teachers suggested the inclusion of a regular reinforcement plan. At the end of week 2 and 3, the investigator of the study, acting as the school counsellor, visited the experimental groups and together with the teacher provided general verbal positive feedback for students participating by self - monitoring/evaluating. Those students that accurately self - evaluated/monitored with the best possible scores in three or more areas for the week received a candy. The teachers felt students were deserving of this extra recognition along with the limited specific verbal praise and positive feedback they felt they were providing. To control for the effect of having the school counsellor recognize student progress in the experimental groups, the school counsellor also visited control groups informally to solicit feedback on general student social and academic progress. The control group teachers would keep the counsellor informed regarding this progress as well.

Dependent Measures

Both experimental and control groups in grade 4 and 6 were administered the pre and posttest measures in approximately 60 minutes each time. The researcher of the study conducted the testing for all groups on consecutive days. In order to elicit their cooperation, subjects were informed that the school wished to do a survey on study skills. Subjects were instructed to answer all questions as honestly and accurately as possible with respect to their own current perceptions. If they wished, subjects also had the option of choosing to not complete the measures, however, no individuals elected to exercise this option. Classroom teachers were present during both pre and posttest administrations. Subjects were provided with the necessary definitions and guidance to accurately complete the measures. Student questions pertaining to the completion of the measures were consistent in all classes. With respect to the experimental groups, no reference was made to the self - management procedures being used when students were required to complete posttest measures.Three different measures were administered to collect pre and posttest data for three variables as follows.

Student Self - Rating

In order to measure student self - perceptions with respect to their current level of functioning regarding the selected target behaviors, a self - rating form was constructed. The form used the same rating scale as was to be used during the self - management treatment and made reference to the same target behaviors. Figure 3.2 shows the self - rating form used to gather pre and posttest student perceptions of both control and experimental subjects.



Self - Rating

Name: ____________________ Date: __________

During this class, how would you rate yourself on the following?

	Excellent	Satisfactory	Needs Improvement
1. Listening to the speaker	1	2	3
2. On - task behavior	1	2	3
3. Effort on assignments	1	2	3
4. Completion of assignments	1	2	3

Rating System:

3 = **Needs improvement** - do not exhibit this behavior throughout most classes. The teacher may have to take disciplinary actions beyond warnings and reminders.

2 = **Satisfactory** - occassionally (once or twice) not exhibiting the behavior and may receive warnings or reminders from teacher.

1 = **Excellent** - display the behavior throughout all classes and do not receive teacher warnings or reminders.

Figure 3.2 Student self - rating form

This instrument is essentially a behavioral assessment questionnaire which can be an efficient way to quickly collect information and is considered advantageous for self - control investigators to utilize if appropriate (Jeffery, 1974).

The individual self - ratings for target behaviors were added to obtain a total self - rating raw score for data analysis. Total self - rating scores could not be greater than 12 or less than 4, with 4 representing a perfect score and 12 the worst possible score. Lower scores approaching 4 indicate "better" ratings as opposed to higher scores being representative of "worse" ratings.

Using this self - rating form, students were asked to rate themselves according to how they perceived themselves to be "most of the time" in the 40 minute class in which they were to do or had done the self - management intervention. With respect to control groups, their self - ratings pertained to the same 40 minute class (either math or language arts) used by the experimental groups.

Teacher Rating

Control and experimental group teachers completed ratings of each student with respect to the same target behaviors and rating scale as provided on the student self - rating form. Pre and posttest teacher ratings therefore, of both control and experimental students were provided. Each teacher was seen individually by the investigator to ensure accurate and consistent understanding of the rating system during pre and posttest measurements. Again, the ratings applied to how teachers perceived their students during the selected 40 minute period, before and after the self - management intervention. It was assumed that the teacher ratings serve as a gauge to changes in student behavior. Teachers completed their self - ratings individually in consultation with the investigator in the hope of insuring consistency. Control teachers did not obtain information regarding the study and experimental teachers were given no information regarding the hypotheses. Experimental teachers were only informed that the intervention would possibly have some effect on their classes. This does not mean however, that teachers could not deduce the expected outcomes of such a study as it would be impossible to have them blind to the experimental condition.

Student Perception of Accountability

The Academic Achievement Accountability (AAA) questionnaire developed by Clifford and Cleary (1972), was administered to control and experimental groups in order to assess student self - perceptions with respect to self - accountability versus no accountability for academic achievement. The AAA questionnaire is subtitled "You and School" and is presented in table 3.3.

This questionnaire was developed by Clifford et. al. to resemble the Intellectual Achievement Responsibilities scale in its attempt to assess locus of control as being internal (I) or external (E).

The AAA questionnaire was found to be appropriate for the grade level of the control and experimental groups where reading level and time to complete were factors taken into consideration. Reliability KR - 20 coefficients for the AAA are estimated at .66 and .67. Clifford et. al. claim that the AAA questionnaire to be able to discriminate between self - accountability and no accountability and they describe it as like asking a child whether he or she is the cause for an academic related event as opposed to an undefinable cause for the event. Borg and Gall (1989) suggest using the scale to measure locus of control in students from grade 3 to 8. The AAA was choosen because of it's specificty for academic achievement which was of interest to the researcher for the current study. The AAA was designed to measure locus of control as it related to academic outcomes only.

This would allow for higher prediction in such situations as compared to the low predictive value of a scale which measures locus of control in a wide variety of life situations (Rotter, 1975). An instrument used to provide a broad gauge for locus of control cannot be expected to have high internal consistency compared to a scale which samples different strengths of responses in a narrow area (Rotter, 1975).

You and School

	Yes	No
1. Do your marks get worse when you don't work hard?	(*)	( )
2. Does studying before a test seem to help you get a higher score?	(*)	( )
3. Are you surprised when you get a good mark?	( )	(*)
4. Do you think studying for tests is a waste of time?	( )	(*)
5. If you get a bad mark, do you feel it's your fault?	(*)	( )
6. Are you surprised when the teacher says you've done ans assignment well?	( )	(*)
7. When a teacher gives you a low mark is it because he/she doesn't like you?	( )	(*)
8. When you really want a better mark than usual can you get it?	(*)	( )
9. Do you think students get low marks just because luck is against them?	( )	(*)
10. Do your lowest grades come when you don't study your assignment?	(*)	( )
11. Do your test marks seem to go up when you study?	(*)	( )
12. Is a high mark just a matter of "luck" to you?	( )	(*)
13. Do you think you deserve the marks you get?	(*)	( )
14. Do you usually get low marks even when you study hard?	( )	(*)
15. Are tests just a lot of guesswork for you?	( )	(*)

Figure 3.3 **You and School Questionnaire**

Teacher Feedback

At the end of the 5 week self - management program, feedback from teachers regarding the intervention was solicited verbally on an informal level by a set of standard questions.

Teachers responded freely and openly to the following:

1) Did you find the self - management program to be effective?

2) What were the weaknesses of the self - management program?

3) Would you be interested in utilizing such programs in the future?

Figure 3.4 outlines the experimental activities for this study in a flow chart format.

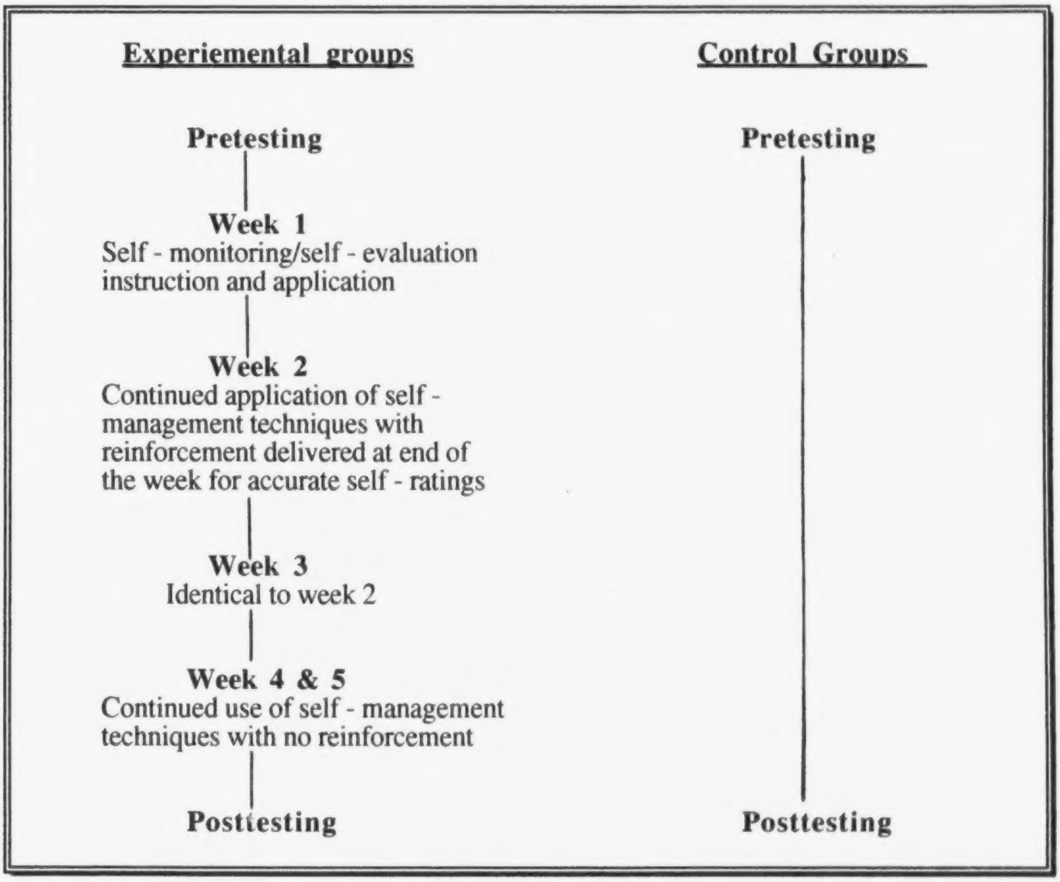

Experiemental groups
Control Groups
Pretesting
Pretesting
Week 1
Self - monitoring/self - evaluation instruction and application
Week 2
Continued application of self - management techniques with reinforcement delivered at end of the week for accurate self - ratings
Week 3
Identical to week 2
Week 4 & 5
Continued use of self - management techniques with no reinforcement
Posttesting
Posttesting

Figure 3.4 Experimental Design Flow Chart

CHAPTER IV. RESEARCH FINDINGS

Analysis of the data collected consists of a descriptive analysis and a statistical analysis followed with qualitative information collected from participating teachers. Appendix one provides the definition for all abbreviations used in the compilation and presentation of the data. Appendix two contains the unaltered raw data collected from all control and treatment groups in the study.

Descriptive Analysis

The descriptive statistics calculated for each group are presented in appendix 3. Data pertaining to group means is provided in figure 4.1.

Grade 4E	Group Mean	
	Pretest	Posttest
Self Rating	6.38	5.00
Teacher Rating	5.79	4.70
You and School	11.71	11.88

Grade 4C	Group Mean	
	Pretest	Posttest
Self Rating	5.79	5.71
Teacher Rating	5.58	5.58
You and School	12.21	12.63

Grade 6E	Group Mean	
	Pretest	Posttest
Self Rating	6.24	5.00
Teacher Rating	6.64	4.80
You and School	11.32	12.60

Grade 6C	Group Mean	
	Pretest	Posttest
Self Rating	6.44	6.36
Teacher Rating	6.44	6.44
You and School	12.28	12.60

Figure 4.1 Group mean scores on pre and post test measures

Group means for the experimental groups in grade 4 and 6 improved from pre to posttest measurement for both student self - ratings, (SRs), and teacher ratings (TRs). With respect to the YS questionnaire, the grade 4E group mean had a negligable improvement while the grade 6E group had a more noticeable improvement in comparison. Figures 4.2 and 4.3 graphically depict the changes in experimental group means for each dependent variable considered in the study.

Group means for the control groups in grade 4 and 6 however, showed no improvements. For both grades, SR group means decreased slightly while TRs remained exactly the same from pre to posttesting. With respect to the YS questionnaire, both grade 4 and 6 control group means showed slight increases. Figure 4.4 and 4.5 graphically depict the changes in the control group means for each dependent variable considered in the study.

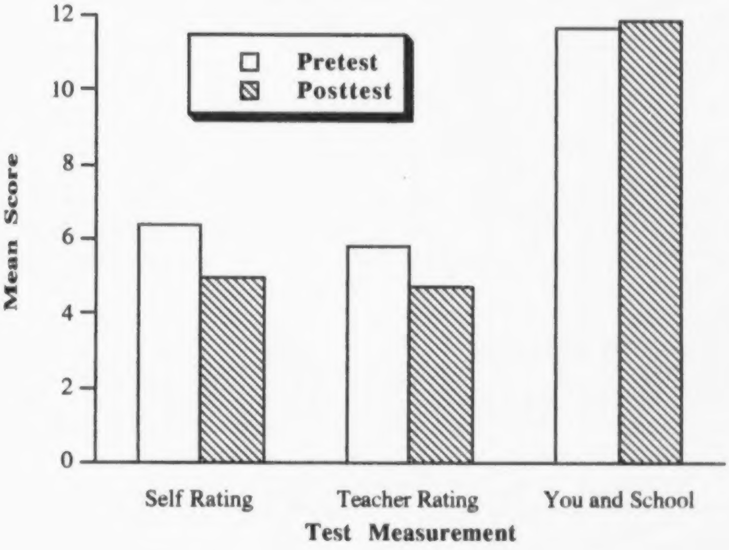


Figure 4.2 Gr. 4E Group Means

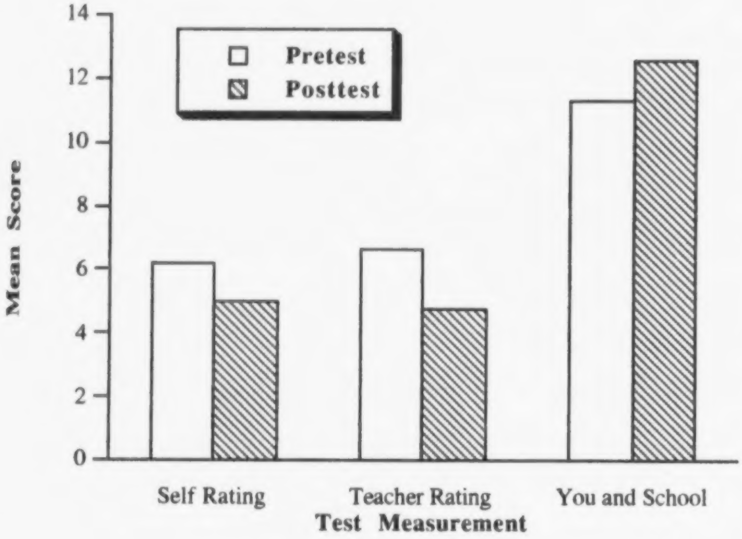


Figure 4.3 Gr. 6E Group Means

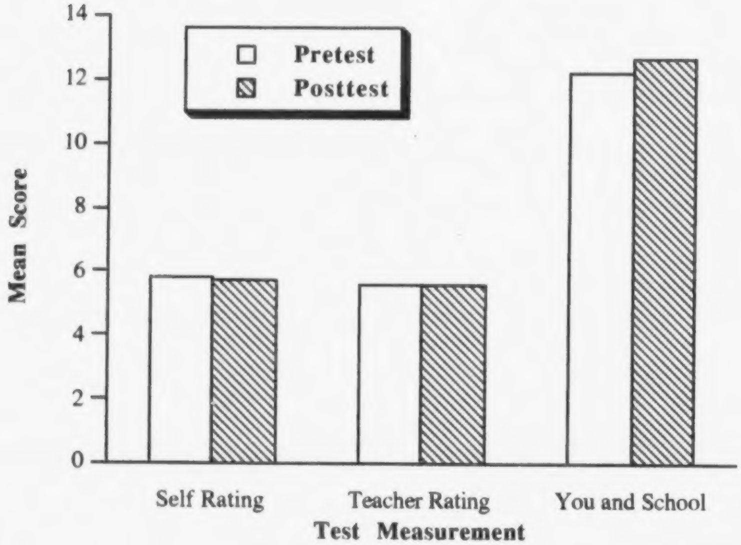


Figure 4.4 Gr. 4C Group Means

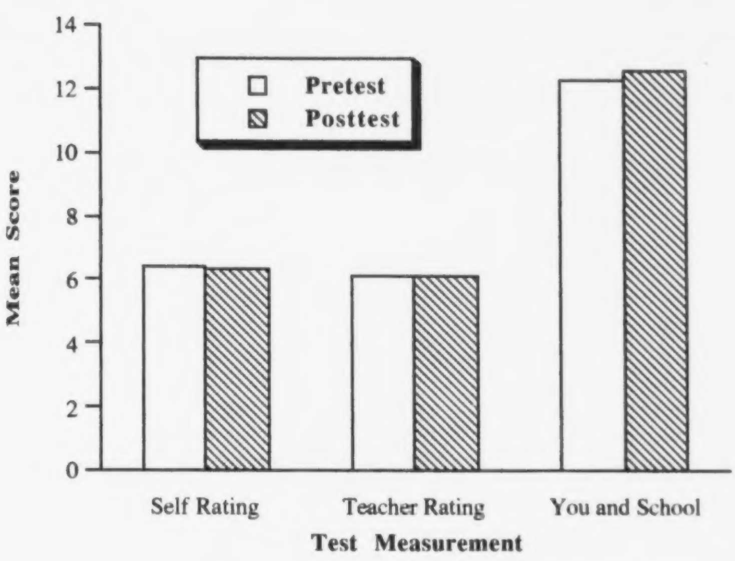


Figure 4.5 **Gr. 6C Group Means**

Grade 4E

A closer look at individual subject SRs shows that only 3 of the 24 students (12.50%) gave themselves the best possible SR during pretesting. The rest of the subjects in this group (87.50%) gave themselves less than perfect ratings at pretesting and therefore, had room for improvement at posttesting. All subjects who could improve their SRs did and those that had no room for improvement retained their perfect SRs. No subjects therefore, rated themselves worse after the treatment condition. One hundred percent of those subjects who could improve their SRs did so, to some extent, after treatment. The greatest improvement was a difference of 4 points noticed for 2 subjects whereas the lowest amount of improvement was 1 point. The median difference score was 1 and on average, subjects in this group increased their SRs by 1.70 points. Figure 4.6 graphically depicts the frequencyof scores for pre and posttesting conditions for subject SRs.

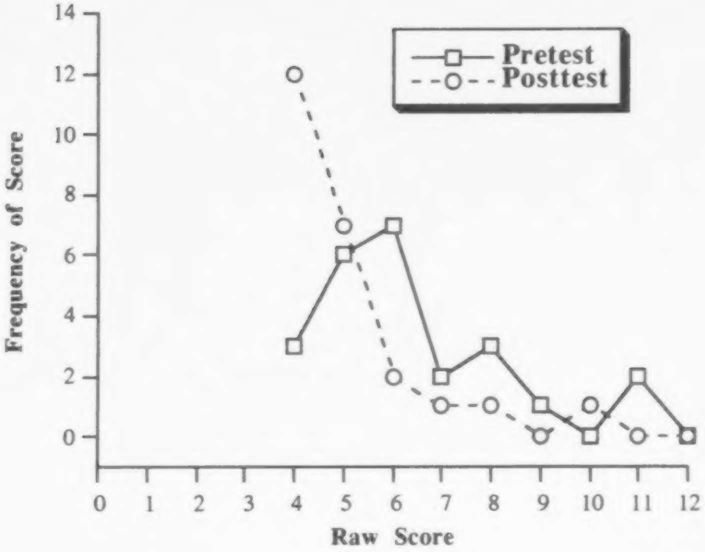


Figure 4.6 Gr. 4E Self Ratings

The graph clearly shows a shift in the bulk of scores to occur at or near the best self - rating possible at posttest whereas, pretest scores are more spread out across the range of scores possible. The variance of SR scores decreased from 3.81 to 2.26 at posttesting.

With respect to teacher ratings, at pretesting, 13 students (54.17%) received perfect ratings while the remaining 11 subjects (45.83%) had less than perfect ratings (and therefore room for improvement). Posttest TRs show 9 of the 11 students who could receive improved ratings did so whereas the other two students' TRs remained the same. At posttesting, 15 subjects received perfect TRs. Those students who received perfect TRs at pretest retained this rating at posttest. Just as with SRs, no subject received a worse TR after the treatment condition. Approximately 82% of the subjects that could receive a better teacher rating did so at posttesting. On average, the teacher increased his/her ratings of students by 2.9 points. One individual's score increased by 7 points whereas the lowest improvement was by one point for one student. The median difference in pre and posttest teacher rating scores was "0" as the majority of students did not have room for improvement. Figure 4.7 graphically depicts teacher ratings during pre and posttesting. It is apparent that in both conditions, a large number of students received perfect or near perfect ratings from the teacher. The most noticeable difference at posttesting from pretesting is the disappearance of a clump of students in the middle of the distribution, and a shift in the distribution toward perfect or near perfect ratings. The lower variability in teacher posttest ratings is evident by the decrease in calculated group variances(from 6.30 to 2.74) . Those students the teacher rated the least favourably tended to have made the greatest improvement in the target behaviors (according to teacher perceptions) thereby, moving closer to those subjects who initially received perfect or near perfect TRs. One

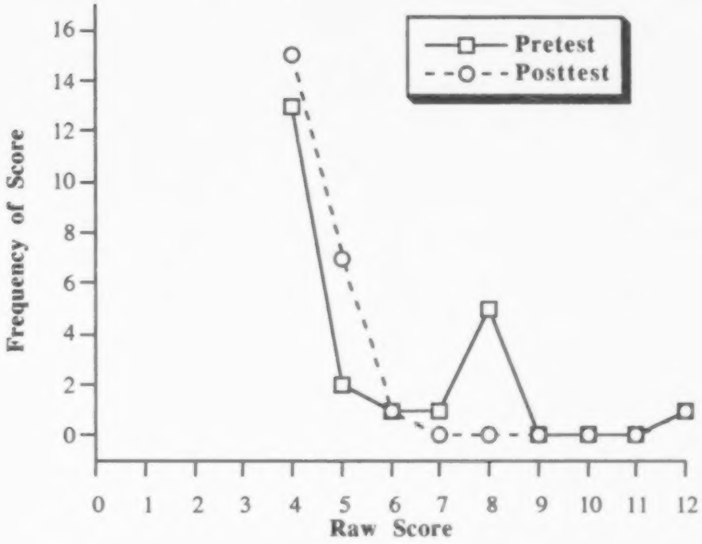


__Figure 4.7__ **Gr. 4E Teacher Ratings**

subject who received the worst rating possible was an exception. This individual's rating failed to change over the course of the treatment.

In comparing student SRs and TRs, it appears that, on average, students consistently rated themselves lower than the teacher did on pre and posttest measures. Pretest subject SR median score was 6 (two away from a perfect rating) and at posttest the median score improved to 4.50 (only .5 away from a perfect score). The teacher median score remained at 4 (a perfect rating) from pre to posttesting. On average, the teacher's perception regarding student performance on target behaviors appears to be more favourable in comparison to how subjects perceive their performance to be before treatment. This gap however, narrowed significantly after treatment where student perceptions of their behavior appear to more closely approximate those perceptions of the teacher. With respect to the pre and posttest means for each individual target behavior on SRs and TRs, all were observed to have decreased at posttesting. Therefore, improvements occurred across all 4 target behaviors for these ratings.

The YS questionnaire mean pre and posttest scores showed very little difference (variance score was 3.35 at pretesting and 4.81 at posttesting). Thirteen subjects received lower posttest scores which, on average, were 1.63 points lower. Nine subjects scored better at posttesting on average by 1.89 points. The remaining subjects (2) had no change in pre - posttest scores. Figure 4.8 depicts this relationship graphically.

Grade 4C

Within the grade 4 control group pretest SRs, 18 of the 24 students (75%) gave themselves less than perfect scores thereby having room for improvement. Only five of those students (27.78%) improved their SRs on average by 1.4 points. Six students (25%) gave themselves perfect SRs during pretesting, two of which reduced their ratings during posttesting. Altogether, 5 of the 24 students, 20.83%, gave themselves lower ratings on average by 1.2 points at posttesting. The median score at pretesting for student SRs was

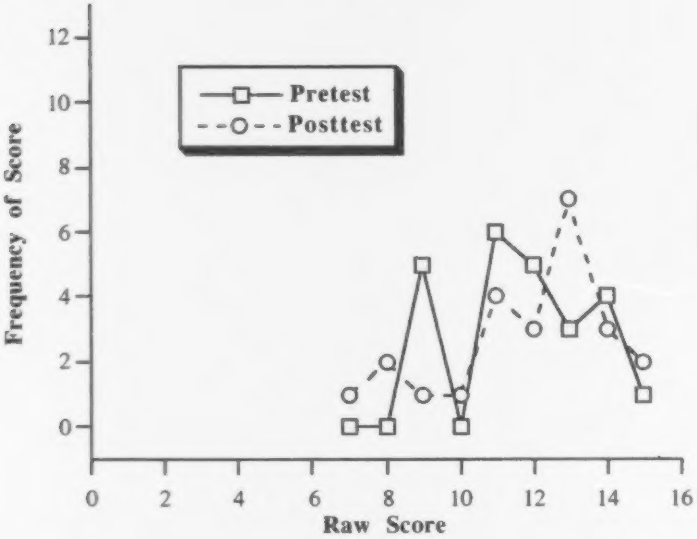


Figure4.8 Gr. 4E You and School Questionnaire

5.50, 1.5 away from a perfect rating, while the posttest median score was 6.0, two points away from a perfect score. The most frequent student SR score at pretesting was 4 and 5 and dropped to 6 at posttesting. Figure 4.9 graphically shows the frequency distribution for pre and posttest SR scores.

Teacher ratings for students in 4C remained exactly the same from pre to posttesting. The teacher did not perceive any changes in student behavior respective of the target behaviors.

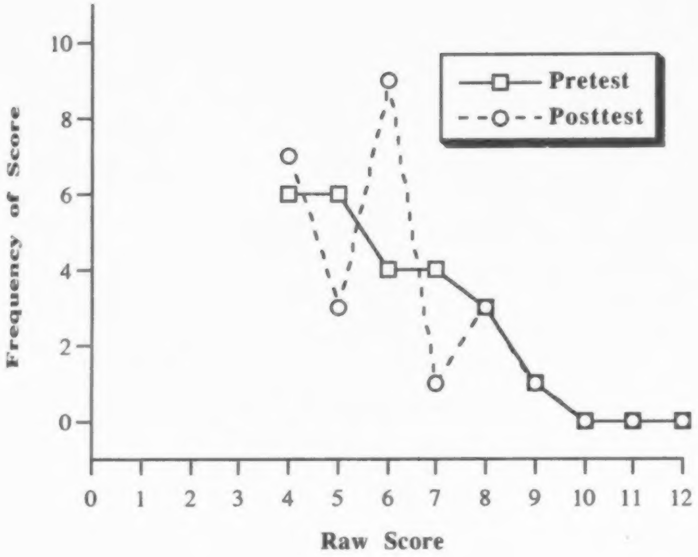


Figure 4.9 Gr. 4C Self Ratings

Seven of the 24 students (29.17%) received perfect TRs while the remainder of students (70.83%) had less than perfect TR scores. The median pre and posttest score was 5, one away from a perfect rating. The most frequent pre and posttest score was 4, a perfect rating. Figure 4.10 shows the frequency distributions for the pre and posttest teacher ratings.

In comparing student SRs and TRs of student behavior it appears that students rated themselves relatively similar to how the teacher rated them. The student SRs show slightly more variability compared to TRs at pretesting where SR scores had a variance of 2.35 and TR scores one of 2.0 during pre and posttesting. The student SR median score tended to worsen slightly at posttesting and the most frequent score changed from 4 and 5 to 6 from pre to posttesting.

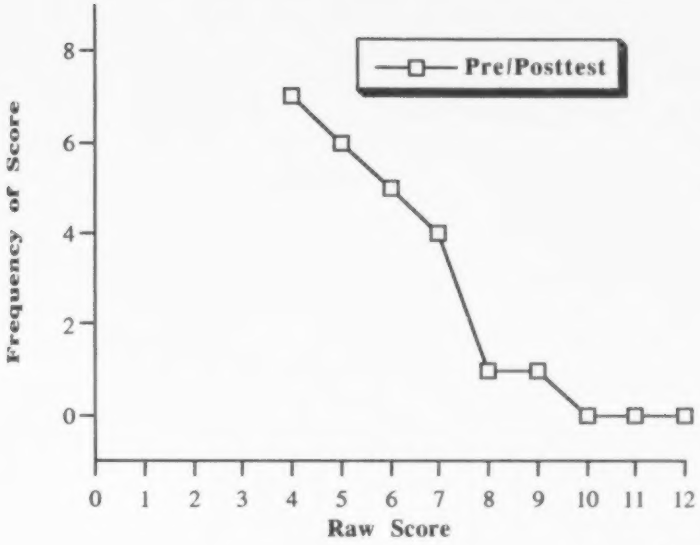


Figure 4.10 **Gr. 4C Teacher Ratings**

The YS questionnaire mean pre and posttest scores show relatively little differences. Six students received lower posttest scores which, on average, were 1.7 points lower. Ten students received better posttest scores which, on average, were 2 points better. Figure 4.11 shows the frequency distribution for pre and posttest student scores.

Grade 6E

At pretesting, the most frequent SR was 6 which improved to 5 at posttesting. The median score at pretesting was also 6 and again, improved to 5 at posttesting. At pretesting, the majority of subjects (84%) gave themselves less than perfect SRs whereas 4 of the 25 subjects (16%) gave themselves perfect SRs of 4. At posttesting, 2 of the 4 students retained their perfect SRs while altogether, 4 of the 25 (16%) students had worse SR scores on average by 1 point. Of the 17 subjects with imperfect pretesting SRs, 80.95%

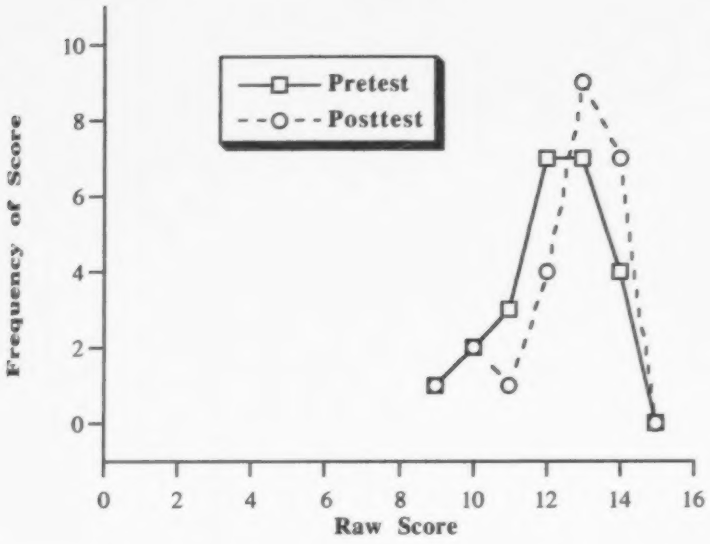


Figure 4.11 Gr. 4C You and School Questionnaire

improved their SRs on average by 1.76 points at posttesting. Sixteen percent of subjects did not change their SRs from pre to posttesting. A very notable difference in variance scores is observed. At pretesting the variance was 1.44 decreasing to 0.60 at posttesting. Figure 4.12 shows the frequency distribution for this group.

At pretesting, the most frequent TR was 8 which improved dramatically to 4 at posttesting. The median score at pretesting was 7 which again, showed considerable improvement to 4 at posttesting. The range of TRs did not change considerably from pre to posttesting where in both cases the best score was 4 and the worst score changed from 9 to 8. The variability in TRs appeared to have increased from a variance score of 0.28 at pretesting to 1.08 at posttesting. Sixteen percent of subjects, (4 of 25), received perfect TRs at pretesting. This rose to 13 at posttesting. Of the 21 students who had room to obtain higher TRs at

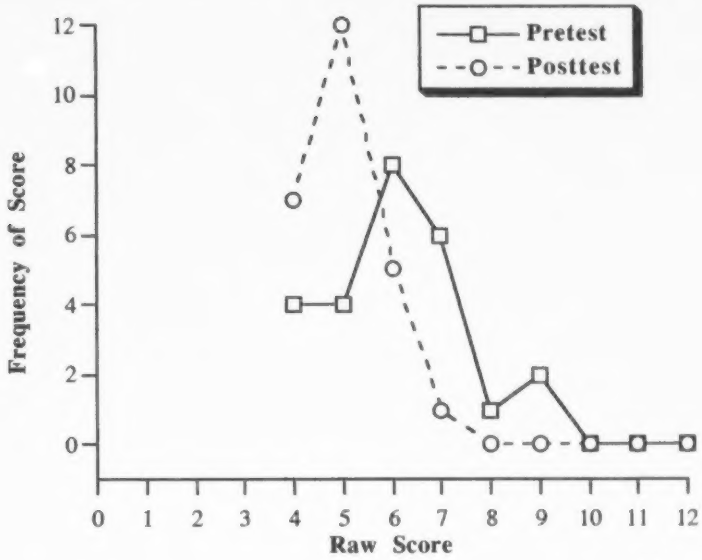


Figure 4.12 Gr. 6E Self Ratings

posttesting, all of them (100%) did on average by 2.19. Therefore, according to teacher perceptions at posttesting, all students retained perfect scores or improved their TR score. Figure 4.13 shows the frequency distribution for TR scores at pre and posttesting.

In comparison, subject SRs and TRs appear to be quite similar at both pre and posttesting. Subject SRs appeared to be consistent with TRs before and after treatment With respect to the differences in pre and posttest means for each individual target behavior, all were observed to have decreased at posttesting. Therefore, improvements occurred across all 4 target behaviors for these ratings.

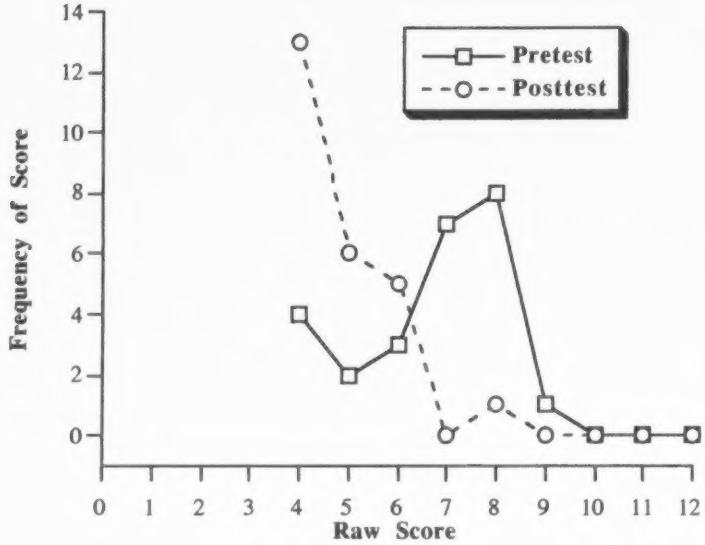


Figure 4.13 Gr. 6E Teacher Ratings

YS questionnaire group means showed a positive change by 1.28 points from pre to posttesting. For both pre and posttesting periods, the most frequent score and the median score was 12. Four students (16%) received lower scores at posttesting on average by about 2 points. Seventeen students however (68%) received higher scores on average by 2.35 points. The largest increase was by 4 and the lowest by 1. The variance of scores decreased from 5.56 to 2.58 between the two testing periods. Figure 4.14 shows the difference of distribution scores for pre and posttest periods.

Grade 6C

At pretesting, the most frequent SR and median score were 6 which remained the same at posttesting. At pretesting, the majority of students, 80%, gave themselves less than perfect

SRs whereas 5 of the 25 students, (20%), gave themselves perfet ratings. At posttesting, two of the students with perfect pretest SRs had worse scores while the others retained their perfect SRs. Seven students, 28%, had lower posttest scores on average by 1.43 points. Eight students of the 20, (40%), who had room to improve their pretest SRs did so on average by 1.50 points. Eight of the 25 students (32%), did not have changes in their SRs from pre to poststesting. Very little difference in variance scores is notable where at

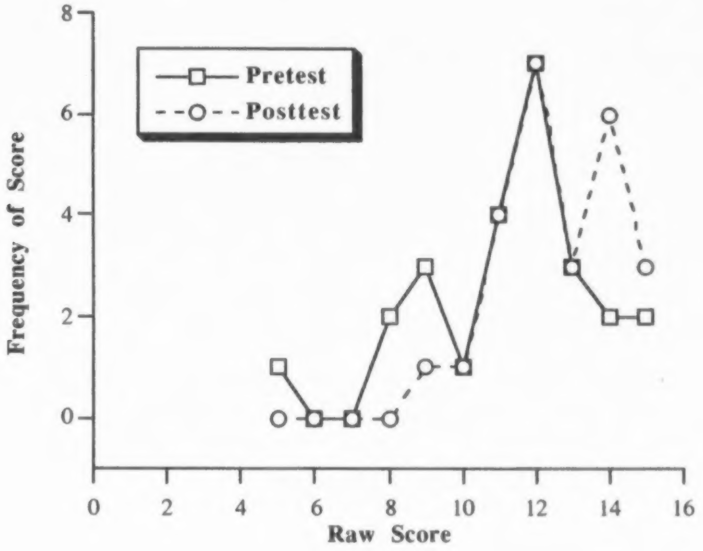


Figure 4.14 Gr. 6E You and School Questionnaire

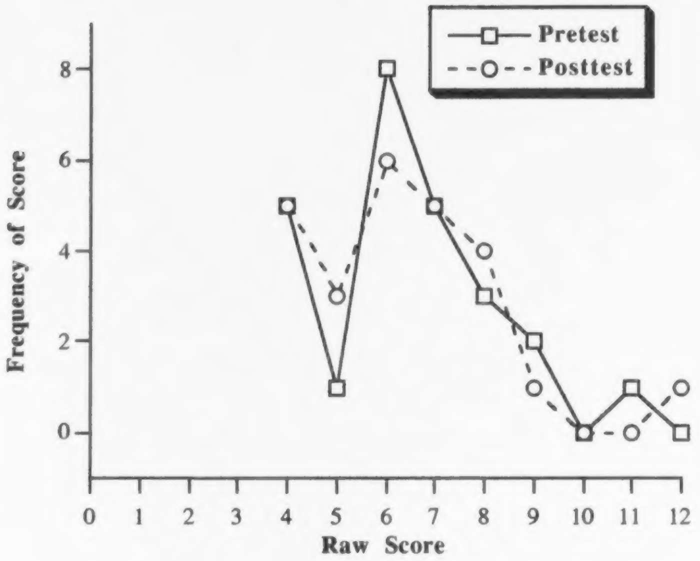


Figure 4.15 Gr. 6C Self Ratings

pretesting, the variance was 3.17 which increased to 3.57 at posttesting. Figure 4.15 shows the distribution of scores at pre and posttesting.

Teacher ratings did not change from pre to posttesting. The median and most frequent score were 5. TRs ranged from 4 to 10 with a variance of 1.94. Six of the 25 students (24%) made perfect TRs while 19 (76%) had imperfect ratings. In comparison to student SRs, the two are relatively comparable with respect to their group means, median and mode. Their variances differ substantially however where SRs had a variance of 3.17 and 3.57 at pre and posttesting respectively. and TRs had a variance of 1.94. Figure 4.16 displays the frequency data for TR scores.

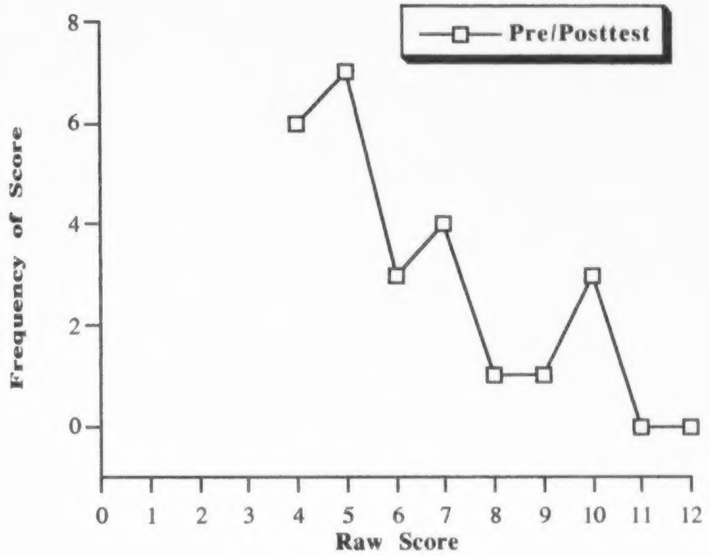


Figure 4.16 Gr. 6C Teacher Ratings

YS questionnare scores showed negligable improvement from pre to posttesting. The pretest median score was 13 and the most frequent score was 15. These did not change at posttesting. The variance decreased slightly from 7.38 to 6.67. Eight students (32%) decreased their scores on average by 0.44 points whereas 11 students (44%), increased their scores on average by 2.36 points. Six students, 24%, did not change their scores from pre to posttesting. Figure 4.17 is a graphical representation of the frequency test scores.

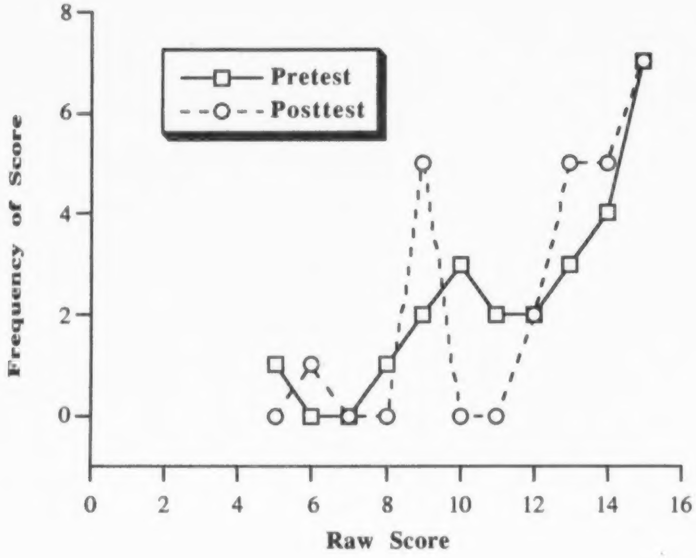


Figure 4.17 Gr. 6C You and School Questionnaire

Nonparametric Statistical Analysis

The Wilcoxon Signed Rank Test for Paired Differences was used to detect any significant differences between pre and posttest measures for each group of students. The null hypothesis in each case was that both pre and posttest distributions were identical. Rejection of the null hypothesis would mean that it is highly unlikely that the two samples came from the same population and hence, significant changes occurred. The alpha level of significance was 0.05 in each case. Appendix 5 contains the numerical data used to compute such calculations for each group on each dependent measure.

Grade 4E

In comparing SR pre and posttest scores, T+ = sum of positive ranks = 190 and T- = sum of negative ranks = 0. Rejection region for the smaller T value at alpha 0.05 is less than or equal to 46, therefore, the null hypothesis is rejected to conclude that the distribution of SR pre and posttest scores differs significantly. For TR scores, T+ = 45 and T- = 0, with the rejection region being less than or equal to 6 therefore, again the null hypothesis is rejected to conclude the pre and posttest distribution of scores are significantly different. YS questionnaire T+ = 70 and T- = 83. The rejection region is less than or equal to 35 therefore, the null hypothesis can not be rejected concluding that the distribution of pre and posttest scores do not differ significantly.

Grade 4C

For SR pre and posttest difference scores, T+ = 38 and T- = 28. The rejection region is less than or equal to 11. In this case then, the null hypothesis can not be rejected as the lowest T score does not fall into the rejection region. Therefore, there is no significant difference between these two distributions. No difference exists in TR scores therefore the distributions at pre and posttesting are identical. The YS questionnaire T+ = 48.5 and T- = 87.5. The lowest T value does not fall within the rejection region of less than or equal to 30. Therefore, the null hypothesis is accepted and no significant difference exists in the pre and posttest distributions.

Grade 6E

For SR pre and posttest scores, T+ = 203 and T- = 28. The rejection region is less than or equal to 59 therefore, the null hypothesis is rejected and in conclusion these two distributions are significantly different from one another. For TR pre and posttest scores, T+ = 231 and T- = 0 and again, the null hypothesis is rejected as the region of rejection is less than or equal to 58. The YS questionnaire pre and posttest results show significant differences in their distributions as well. T+ = 32.5 and T- = 177.5 where the rejection region is equal to or less than 52.

Grade 6C

For SR pre and posttest results, T+ = 68 and T- = 52 with the rejection region being less than or equal to 25. Since the lowest T value does not fall into the rejection region the null hypothesis is accepted and it can be concluded that no significant differences exist between these two distributions of scores. The TR scores remained unchanged for pre and posttest measures, therefore no significant difference. The difference between pre and post YS distributions is also insignificant as the null hypothesis can not be rejected. In this case, T+ = 92 and T- = 98 with a rejection region equal to, or less than 46.

Teacher Feedback

In response to the question "did you find the self - management program to be effective?", both experimental teachers responded affirmatively elaborating by saying that it made their classes run more smoothly as the group attention appeared more focused. Both teachers felt most students benefited from the procedure improving their social/academic behavior as targeted by the self - management program and seemed to increase their level of "self - awareness" with respect to their behavior. The grade six teacher also commented on how less energy went into reprimanding students for infractions of classroom rules thereby taking emphasis off the teacher as the "controlling" agent.

In response to the question "what were the weaknesses of the self - management intervention?" the experimental teachers unanimously found it difficult to provide immediate feedback with so many students. The grade 4 teacher also found that more "difficult" or "at risk" students appeared to require a more intensive intervention where, for these types of students, the teacher observed no or very little change in their social and academic responses. The teacher however, felt the self - management techniques would be effective for these students but on a more individual basis where feedback and reinforcement was more frequent.

In response to the question "would you be interested in utilizing such programs in the future?" both teachers indicated that they would. The grade 4 teacher was interested in implementing such a program earlier on in the new school year and would like it to apply to the whole day rather than just one period a day. Both teachers felt the self - management procedures had potential for future applications in their classrooms.

CHAPTER V. SUMMARY AND DISCUSSION

A class - wide self - management program was implemented at the grade 4 and 6 level in an urban K to 9 school. Self - monitoring and self - evaluation were taught to, and utilized by, the experimental groups for approximately 5 weeks during one period a day. Control groups were used in order to compare pre and posttest data between groups of students using the self - management program and those who were not. Of interest to the investigator were the effects on student social and academic behaviors as perceived by students themselves and their teachers. The effects on student perceptions of control were also investigated. Hence, the study primarily attempted to provide support for the effectiveness of the self - management techniques in bringing about perceived positive changes in social and academic behavior as well as promoting the development of an internal locus of control. Also of concern was the social validity of such an approach which addresses the utility of self - management interventions on a class-wide basis.

Interpretation of results

The findings from this study indicate that a class-wide self - management program involving self - monitoring and self - evaluation with reinforcement contingent on accurate high self - ratings was effective. Both teacher and student perceptions regarding student social and academic behavior had improved significantly among the experimental groups. These groups of students had better self ratings and teacher ratings at the completion of the study. Although student perceptions may be somewhat unreliable data, this was controlled for by having a control group against which to compare experimental group changes in self perceptions. The results indicated that the changes in student perceptions was significant only in the experimental groups and not in the control groups. As experimental students tended to rate themselves more favorably with respect to their appropriate social classroom and academic behavior, they may have been developing perceptions of competence with respect to these particular behaviors and with respect to the particular class in which the self

- management treatment took place. A perception of competence is extremely important where perceived competence has been found to be a stronger predictor of future interest in, and engagement with related tasks, than actual competence (Spaulding, 1992). Actual positive changes in social and academic behavior can be assumed to have taken place due to the observed positive differences in teacher ratings. The only threat to the validity of this assumption however, is the possibility of teacher bias. This can refer to whether or not the teachers systematically tended to measure student responses in ways that deviated from the initial definition of target behaviors and rating criteria. This is considered to be unlikely however, given that the teachers were well informed about being consistent on their ratings and taking care to apply the guidelines and criteria in the same way at pre and posttesting conditions. It is also possible that teacher expectations may have had an effect on their tendency to rate students in such a way at posttesting to favor the hypothesis of the study as it was possible for experimental teachers to deduce the treatment effects. Again, it is this investigators observation and opinion that teachers appeared to be consistent in their ratings in adhering to the guidelines and criteria established at the onset of the study. The concurrent changes in student self ratings may be considered further evidence to support the absence of teacher bias on posttesting measures.

The findings of this study were inconsistent for perceptions of control where only the grade 6 experimental group was found to have achieved a significant change in locus of control.This change was as predicted where subjects would become more internally controlled with respect to academic achievement. This was expected to have also occurred at the grade 4 level, however, results regarding perceptions of control for this group were found to show no significant difference between pre and post treatment conditions. One speculation might be that students at this developmental level may require more time in order for improved self perceptions regarding appropriate social and academic behavior to develop further into perceptions of internal control. This would be consistent with

Spaulding's (1992) theory regarding motivation where perceived competence precedes, in importance, perceived control. If students were developing perceived competence through improved self - evaluation, it may be that this is as far as they got and with further application of the self - management techniques would begin to feel more internal or personal control. As Spaulding explains:

> "If a person does not perceive her or himself as being very competent, then opportunities to take some personal control of the situation will be meaningless at best and threatening at worst. Hence, without some level of perceived competence, individuals will never perceive themselves as having any real control" (p.25).

Therefore, if students had not sufficiently developed perceptions of competence then perceptions of control would likely not change or develop as well. By far, more research is required regarding the effects of self - management interventions on locus of control. This study was a very preliminary attempt at examining such relationships and the findings can be considered very tentative with respect to the effect on locus of control.

Teacher feedback regarding the self - management intervention employed in this study clearly provides social validity for such interventions on a class - wide basis. The only exception being that more difficult students may require more intense intervention. In this case, only one student was found to not benefit from the intervention. However, it should be noted that other students, initially rated very similar to this student by the teacher before treatment, did make substantial improvements. Assuming Witt (1986) is correct in saying that if teachers "think" an intervention is effective they are more likely to employ it's procedures, then this study would support the utility of self - management techniques. Although teachers did find it difficult and more demanding to provide constant feedback as soon as possible to all students, it was apparent from the results that "regular" students may not require such frequent feedback and reinforcement in order to show improvements. The schedule of reinforcement in this study utilized a rather long interval time between responses and feedback/reinforcement and yet, students were still found to have made improvements with respect to the target behaviors.

Although the reinforcement procedure used in this study added "externality" to the self - management procedures, students appeared to have maintained their social/academic improvements over the course of the study with no tangible reinforcement occurring during the last two weeks. It would, of course, make sense that more difficult students who are perhaps more entrenched in their negative and/or inappropriate ways of functioning would require a more intensive approach with regards to any intervention. The advantage of a self - management class - wide intervention is that students need not be singled out and those individuals requiring more intensive help may likely not perceive it as threatening or "different" from what the rest of the students are doing.

Limitations of the study

As previously mentioned, the less intense approach to self - management taken in this study may not be as effective for more "at - risk" or "difficult" students. Although teacher feedback indicated this to be a problem, it is difficult to assess just how much more intense the intervention would need to be for such individuals. A closer look at these students may be required to perhaps somewhat modify the intervention in order to increase it's effectiveness.

This study is also limited by not making use of inter - rater reliability checks and a non - standardized teacher rating scale to obtain pre and post measurement information on student social behaviors (listening and on - task behavior). Practically speaking, having more than one observer for each student in the study was not feasible. One might argue that "observers may, in time begin to redefine the initial target behaviors in their own terms" (Jeffrey, 1974) and therefore, deviate from original operational definitions of the target behavior. Making use of video taped class sessions in order to complete such ratings may help to reduce this threat to the validity of such research as may the use of standardized measures of classroom behavior.

Also previously mentioned, the addition of a reinforcement procedure at the end of weeks 2 and 3 added an external component to the self - management intervention. It is not possible therefore, to determine the degree to which this had an impact on the results of this study. Hence, whether self - monitoring/evaluation can be effective on a class - wide basis without tangible reinforcement is unanswerable. It can be said, although, that such reinforcement may only be required rather sparingly given the fact that the self - management intervention was in use over approximately 25 classes and only twice was this type of reinforcement introduced.

Another limitation affecting this study is the skewdness of responses on the locus of control measure. Here, groups of students tended to choose the internal alternative more often than the external alternative. This, therefore, leads to a rather restricted range of scores. Using a different measure for locus of control, Gruen et. al. (1974) found this to occur as well. This being the case, locus of control measures, such as the one used in the current study, may be vulnerable to tendencies of responding according to social desirability. This skewdness was also apparent with teacher and student ratings where the general tendency was for more positive evaluations. This study used a 3 point Lickert type scale for the measures where perhaps a 5 point scale may provide more discriminative data and reduce the tendency for teacher and student ratings to favor the best possible rating.

Although it was not the intent of this study, the effectiveness of the self - management intervention in terms of the maintenance of positive behavioral change over time can not be evaluated. Future studies employing follow - up procedures to evaluate maintenance of behavioral changes would be required.

Implications

The present study supports earlier research on the effectiveness of self - management strategies and extends limited prior efforts to support the use of such strategies on a class - wide basis. It also appears to validate those factors for which self - management interventions have become so appealing. Namely, these are; the effectiveness with a variety of individuals, the ability to promote the development of internal control orientations and, utilization and teacher acceptance of such procedures on a class - wide basis. The teacher responses and opinions indicating that the self - management intervention positively influenced the target behaviors of students on a class - wide basis have important implications when considering the expectations placed on teachers to effectively deal with diverse groups of students. This diversity requires teachers to employ strategies that enable them to effectively and efficiently attend to special individual needs while also attending to the needs of the larger group. Class - wide self - management strategies, supported by this study, would appear to have the potential to do so whereby those students who would perhaps have been "singled" out intervention benefited as well as the non-referred students population. Therefore, "at risk" students (those experiencing learning/achievement difficulty) benefited along with non-risk students.

Future research

Future research with self - management is highly desirable given its promise for assisting teachers in attempting to meet the needs of students while developing their sense of competence and accountability regarding social and academic behaviors. This study can be considered very preliminary with respect to supporting class-wide implementation of self - management techniques. Future research should seek to replicate the findings of this study as, thus far, very few studies have been conducted on a class - wide basis involving self - monitoring and/or self - evaluation procedures. The effect of implementing such strategies over a longer period of time or perhaps applied in additional subject areas merits investigation. Self - management techniques that are effective but continue to not be overly demanding on teacher time and effort need further development. Explorations of the need for immediate and/or tangible reinforcement for such interventions to be effective should also be conducted as this appears to be the time consuming aspect for teachers. In future research a formal teacher questionnaire that perhaps uses a Lickert scale for recording responses may yield more information regarding specific strengths and weaknesses of the intervention. This type of feedback from teachers would be extremely helpful in developing self - management interventions which have high utilization potential on a class - wide basis. Maintenance and generalization effects of such self - management interventions needs further research as well.

Bibliography

Anderson, L. M. and Prawat, R. S. (1983). Responsibility in the classroom: a synthesis of research on teaching self - control. *Educational Leadership, 40*, 62 - 66.

Baer, D. M. (1984). Does research on self - control need more control? *Analysis and intervention in Developmental Disabilities. 4*, 211 - 218.

Ballard, K.D. & Glynn, T. (1975). Behavioral self - management in story writing with elementary school children. *Journal of Applied Behavior Analysis, 8*, 387 - 398.

Bolstad, O.D. & Johnson, S.M. (1972). Self - regulation in the modification of disruptive classroom behavior. *Journal of Applied Behavior Analysis, 5*, 443 - 454.

Borg, W.R. & Gall, M. D. Educational Research. An Introduction, 5th Edition. 1989, Longman Inc., New York.

Brigham, T.A. (1992). A brief commentary on the future of self - management interventions in education. *School Psychology Review, 21(2)*, 264 - 268.

Brigham, T. A., Hopper, C., Hill, B., De Armas, A. & Newsom, P. (1985). A self - management program for disruptive adolescents in the school: a clinical replication analysis. *Behavior Therapy, 16*, 99 - 115.

Broden, M., Hall, R.V. & Mitss, B. (1974). The effect of self - recording on the classroom behavior of two eighth grade students. In, *Self - Control: Power to the Person*, M.J. Mahoney & C.E. Thoresen, Eds. 1974 by Wadsworth Publishing Co., Inc., California.

Carter, J.F. (1993). Self - management. Educations ultimate goal. *Teaching Exceptional Children, Spring*, p. 28 - 32.

Clifford, M.M. & Cleary, T.A. (1972). The relationship between children's academic performance adn achievement accountability. *Child Development, 43*, p. 647 - 655.

Cole, L. Christine. (1992). Self - management interventions in the schools. *School Psychology Review, 21(2)*, 188 - 192.

Cole, C. L. and Bambara, L. M. (1992). Issue's surrounding the use of self - management interventions in the schools. *School Psychology Review, 21(2)*, 93 - 201.

Connell, M.C., Carta, J.J. & Baer, D.M. (1993). Programming generalization of in - class transition skills: teaching preschoolers with developmental delays to self - assess and recruit contigent teacher praise. *Journal of Applied Behavior Analysis, 26*, 345 - 352.

DeHaas - Warner, S. J. (1991). Effects of self - monitoring on preschoolers' on - task behavior: a pilot study. *Topics in Early Childhood Special Education, 11(2)*, 59 - 73.

Drabman, R.S., Spitalnik, R. and O'Leary, K.D. (1973). Teaching self control to disruptive students. *Journal of Abnormal Psychology, 82*, 10 - 16.

Elliott, S.N. & Shapiro, E.S. Intervention techniques and programs for academic performance problems. In, *The Handbook of School Psychology, 2nd. Ed.* T.B. Gutkin and C.R. Reynolds, Eds. 1990, John Wiley and Sons, Inc., USA.

Fantuzzo, J., Harrell, K. & McLeod, M. (1980). Across - subject generalization of attending behavior as a function of self - regulation. *Child Behavior Therapy, 1(4),* 313 - 321.

Fantuzzo, J. W., Rohrbeck, C. A. &Hightower, A. D. (1989). A teacher assessment of self - controlling skills and their relationship to self - control and adjustment ratings.*Journal of School Psychology, 27,* 35 - 45.

Fantuzzo, J. W. & Polite, K. (1990). School based behavior self - management: a review and analysis. *School Psychology Quarterly, (5)3,* 180 - 198.

Fantuzzo,J.W., Polite, K., Cook, D.M. & Quinn, G. (1988). An evaluation of the effectiveness of teacher versus student management classroom interventions. *Psychology in the Schools. 25,* 154 - 163.

Fantuzzo, J.W., Rohrbeck, C.A. & Azar, S.T. (1987). A component analysis of behavioral self management interventions with elementary school students. *Child and Family Behavior Therapy,9,* 33 - 43.

Gardner, W. I. &Cole, C. L. (1989). Self - Management Approaches. In, *The Treatment of Severe Behavior Disorders*. Edito Ennio Cipani. American Association on Mental Retardation: Washington, D.C.

Glynn, E.L. &Thomas, J.D. (1974). Effect of cueing on self - control of classroom behavior. *Journal of Applied Behavior Analysis, 7,* 299 - 306.

Glynn, E.L., Thomas, J.D. & Shee, S.M. (1973). Behavioral self - control of on - task behavior in an elementary classroom. *Journal of Applied Behavior Analysis, 6,* 105 - 113.

Graham, S., Harris, K.R. &Reid, R. (1992). Developing self - regulated learners. *Focus on Exceptional Children, 24,* 1 - 16.

Gross, A.M. & Drabman, R.S. Teaching Self - recording, self - evaluation, self - reinforcement and self - reward to nonclinic children and adolescents. In, *Self - Management and Behavior Change. From Theory to Practice*, P. Karoly & F.H. Kanfer, Eds. 1982, Pergoamon Press Inc., New York.

Hallahan, D.P., LLoyd, J.W., Kauffman, J.M. & Loper, A.B. Academic Problems. In, *The Practice of Child Therapy*, R.J. Morris and T.R. Kratochwill, Eds. 1983, Pergamon Press Inc., New York.

Hallahan, D. P. & Sapona, R. (1983). Self - monitoring of attention with learning - disabled children: past research and current issues. *Journal of Learning Disabilities, 16,* 616 - 620.

Hallahan, D. P., Lloyd, J. W., Kneedler, R. D. & Marshall, K. J. (1982). A comparison of the effects of self - versus teacher - assessment of on - task behavior. *Behavior Therapy, 13,* 715 - 723.

Hallahan, D.P., Marshall, K.J. & LLoyd, J.W. (1981). Self recording during group instruction: effect on attention to task. *Learning Disability Quarterly, 4*, 407 - 413.

Harris, K. R. (1986). Self - monitoring of attentional behavior versus self - monitoring of productivity: effects on on - task behavior and academic response rate among learning disabled children. *Journal of Applied Behavior Analysis, 19*, 417 - 423.

Hoge, R. D. & Andrews, D.A. (1987). Enhancing academic performance: issues in target selection. *School Psychology Review, 16(2)*, 228 - 238.

Houghton, S.J. (1991). Promoting generalisation of appropriate behavior across special and mainstream settings: a case study. *Educational Psychology in Practice, 7 (1)*, 49 - 54.

Hughes, C.A., Ruhl, K.L. & Peterson, S.K. (1988). Teaching self - management skills. *Teaching Exceptional Children, 20(2)*, 70 - 72.

Hughes, C. A. & Hendrickson, J. M. (1987). Self - monitoring with at - risk students in the regular class setting. *Education and Treatment of Children, 10*, 225 - 236.

Jeffery, D.B. Self - control : methodological issues and research trends. In, *Self - Control: Power to the Person*, M.J. Mahoney and C.E. Thoresen, Eds. 1974, Wadsworth Publishing Co., Inc., California.

Kahn, W. (1989). Teaching self - management to children. *Elementary School Guidance and Counselling, 24*, 37 - 46.

Kanfer, F.H. & Gaelick - Buys, L. Self - Management Methods. In, *Helping People Change. A Textbook of Methods*, F. H. Kanfer, and A.P. Goldstein, Eds. 1991, Pergamon Press, New York.

Lazarus, B.D. (1993). Self - management and achievement of students with behavior disorders. *Psychology in the Schools, 30*, 67 - 74.

Lefcourt, H.M. *Locus of Control. Current Trends in Theory and Research*. 2nd Edition. 1982, Lawrence Erlbaun Associates, Inc., New Jersey.

Lentz Jr., F.E. (1988). On-task behavior, academic performance and classroom disruptions: untangling the target selection problem in classroom interventions. *School Psychology Review, 17(2)*, 243 - 257.

Lloyd, J.W., Bateman, D.F., Landrum, T.J. & Hallahan, D.P. (1989). Self - recording of attention versus productivity. *Journal of Applied Behavior Analysis, 22*, 315 - 323.

Lloyd, J.W., Hallahan, D.P., Kosiewicz, M.M. & Kneedler, R.D. (1982). Reactive effects of self assessment and self- recording on attention to task and academic productivity. *Learning Disability Quarterly, 5*, 216 - 227.

Lovitt, T. C. (1973). Self - management projects with children with behavioral disabilities. *Journal of Learning Disabilities, 6*, 15 - 28.

Maag, J.W., Reid, R. & DiGangi, S.A. (1993). Differential effects of self - monitoring attention, accuracy and productivity. *Journal of Applied Behavior Analysis, 26,* 329 - 344.

Maag, J. W., Rutherford, R. B. Jr. & DiGangi, S. A. (1992). Effects of self - monitoring and contingent reinforcement on on-task behavior and academic productivity of learning disabled students: a social validation study. *Psychology in the Schools, 29,* 157 - 172.

Mace,F.C., Brown, D.K. & West, B.J. (1987). Behavioral Self Management in Education. In *Psychoeducational Interventions in the School,* Charles A. Maher and Joseph E. Zins, Editors. Pergamon Books Inc., Tonbridge, Kent.

Manning, B.H. (1988). Application of cognitive behavior modification: first and third graders' slef - management of classroom behaviors. *American Educational Research Journal,* 25(2), 193 - 212.

McLaughlin, T.F., Krappman, V.F. & Welsh, J.M. (1985). The effects of self - recording for on - task behavior of behaviorally disordered special education students. *Remedial and Special Education, 6,* 42 - 45.

McLaughlin, T.F. (1984). A comparison of self - recording and self - recording plus consequences for on - task and assignment completion. *Contemporary Educational Psychology, 9,* 185 - 192.

McLaughlin, T.F. (1976). Self - control in the classroom. *Review of Educational Research, 46, (4),* 631 - 663.

Merrett, F. & Blundell, D. (1986) Self - recording as a Means of Improving Classroom Kevin Wheldall, Frank Merrett and Ted Glynn, Editors. Croom Helm Ltd.:Kent.

Miller, L.J., Strain, P.S., Boyd, K., Jarzynka, J. and McFetridge, M. (1993). The effects of classwide self - assessment on preschool children's engagement in transition, free play and small group instruction. *Early Education and Development, 4(3),* 162 - 181.

Miller, M. (1991). Self - assessment as a specific strategy for teaching the gifted learning disabled students. *Journal for the Education of the Gifted, 14(2),* 178 - 188.

Nelson, R. O., Lipinski, D. P. & Black, J. L. (1976). The relative reactivity of external observations and self - monitoring. *Behavior_Therapy, 7,* 314 - 321.

Nelson, J.R., Smith, D.J., Young, R.K. & Dodd, J.M. (1991). A review of self - management outcome research conducted with students who exhibit behavioral disorders. *Behavioral Disorders, 16(3),* 169 - 179.

Ninness, H.A., Fuerst, J., Rutherford, R.D. & Glenn, S.S. (1991). Effects of self - management training and rienforcement on transfer of improved conduct in the absence of supervision. *Journal of Applied Behavior Analysis, 24,* 499 - 508.

Nunn, G.D. & Parish, T.S. (1992). The psychosocial characteristics of at - risk high school students. *Adolescence*, 27(106), 435 - 440.

O'Leary, S.G. & Dubey, D.R. (1979). Applications of self-control procedures by children: a review. *Journal of Applied Behavior Analysis, 12,* 449 - 465.

Osborne, S. S., Myron Kosiewicz, M., Bassett Crumley, E. & Lee, C. (1987). Distractible Students Use Self - Monitoring. *Teaching Exceptional Children, 19,* 66 - 69.

Panagopoulou - Stamatelatoa, A. (1990). The use of behavioral self - management in primary school settings: a review. *Educational Psychology, 10(3),* 207 - 223.

Piersel, W.C. (1985). Self - observation and completion of school assignments. the influence of a physical device and expectancy characteristics. *Psychology in the Schools, 22* 331 - 336.

Piersel, W.C. & Kratochwill, T.R. (1979). Self - observation and behavior change: applications to academic and adjustment problems through behavioral consultation. *Journal of School Psychology, 17,* 151 - 160.

Prater, M.A., Joy, R., Chilman, B., Temple, J. & Miller, S.R. (1991). Self - management of on - task behavior by adolescents with learning disabilities. *Learning Disabilities Quarterly, 14,* 164 - 177.

Reid, R. & Harris, K.R. (1993). Self - monitoring of attention versus self - monitoring of performance: effects on attention and academic performance. *Exceptional Children, 60 (1),* 29 - 40.

Rhode, Morgan & Young. (1983). Generalization and Maintenance of Treatment Gains of Behaviorally Handicapped Students From Resource Rooms to Regular Classrooms Using Self Evaluation Procedures.

Risemberg, R. & Zimmerman, B.T. (1992). Self - regulated learning in gifted students. *Roeper Review, 15(2),* 98 - 101.

Roberts, R.N. & Nelson, R.O. (1981) Effects of self - monitoring on children's classroom behavior. *Child Behavior Therapy,3,* 105 - 120.

Rooney, K.J., Hallahan, D.P. & Lloyd, J.W. (1984). Self - recording of attention by learning disabled students in the regular classroom. *Journal of Learning Disabilities, 17(6),* 360 - 364.

Rooney, K., Polloway, E. A. & Hallahan, D. P. (1985) The use of self-monitoring procedures with low I.Q. learning disabled students. *Journal of Learning Disabilities, 18,* 384 - 389.c

Rumsey, I. & Ballard, K.D. (1986). Teaching Self - Management Strategies for Independent Story Writing to Children with Classroom Behavior Difficulties in *Behavioral Analysis in Educational Psychology.* Kevin Wheldall, Frank Merrett and Ted Glynn, Editors. Croom Helm Ltd.:Kent.

Sagotsky, G., Patterson, C. J. & Lepper, M. R. (1978). Training children's self - control: a field experiment in self - monitoring and goal setting in the classroom. *Journal of Experimental Child Psychology, 25,* 242 - 253.

Rotter, J.B. (1975). Some problems and misconceptions related to the construct of internal versus external control of reinforcement. *Journal of Consulting and Clinical Psychology*, 43(1), 56 - 67.

Rotter, J.B., Seeman, M. & Liverant, S. (1962). Internal versus external control of reinforcements: a major variable in behavior theory in *Decisions, Values and Groups*. Norman F. Washburne, Editor. Pergamon Press Inc., Poland.

Santogrossi, D.A., O'Leary, K.D., Romanczyk, R.G. & Kaufman, K.F. (1973). Self - evaluation by adolescents in a psychiatric hospital school token program. *Journal of Applied Behavior Analysis, 6,* 277 - 287.

Sander, Bott, Hughes & Ruhl. Effects of a Self Management Strategy on Task - Independent Behaviors of Adolescents With Learing Disabilities. 1991.

Shapiro, E. (1989). Teaching self - managment skills to learning disabled adolescents. *Learning Disabled Quarterly, 12,* 35 - 43.

Skinner, H.C. & Smith, E.S.(1992). Issues surrounding the use of self - management interventions for increasing academic performance. *School Psychology Review, 21(2),* 202 - 210.

Skinner, E.A., Wellborn, J.G. & Connell, J.P. (1990). What it takes to do well in school and whether I've got it. A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology*, 82(1), 22 - 32.

Smith, Young, West, Morgan & Rhode.(1988). Reducing the disruptive behavior of junior high school students: a classroom self - managment procedure. *Behavioral Disorders, 13,* 231 - 239.

Snider, V. (1987). Use of self - managing of attention with learning disabled students: research and application. *Learning Disability Quarterly, 10,* 139 - 151.

Spates, C.R. & Kanfer, F.H. (1977). Self - monitoring, self - evaluation and self - reinforcement in children's learning: a test of a multistage self -regulation model. *Behavior Therapy, 8,* 9 - 16.

Spaulding, Cheryl L.(1992). *Motivation in the Classroom.* McGraw - Hill Inc.,USA.

Stevenson, H.C. & Fantuzzo, J.W. (1986). The generality and socail validity of a competency based self - control training intervention for underachieving students. *Journal of Applied Behavior Analysis,19,* 269 - 276.

Stevenson, H.C. & Fantuzzo, J.W. (1984). Applications of the "eneralization ap" to a self - control intervention with school - aged children. *Journal of Applied Behavior Analysis, 17,* 203 - 212.

Thomas, J. W. (1980). Agency and achievement: self - management and self - regard. *Review of Educational Research, 50,* 213 - 240.

Thoreson, C.E. & Mahoney, M.J. (1974). *Behavioral Self - Control.* New York:Holt.

Turkewitz, O'Leary & Ironsmith. Generalization and Maintenance of Appropriate Behavior Through Self Control. 1975.

Wallace, J.K. (1989). Teaching self - managment to children. *Elementary School Guidance and Counselling, 24,* 37 - 46.

Webber, J., Scheuermann, B., McCall, C. & Coleman, M. (1993). Research on self - monitoring as a behavior management technique in special education classrooms: a descriptive reveiw. *Remedial and Special Educaiton, 14 (2),* 38 - 56.

Witt, J.C. (1986). Teachers' resistance to the use of school - based interventions. *Journal of School Psychology, 24,* 37 - 44.

Wood, R. & Flynn, J.M. (1978). A self - evaluation token system versus an external evaluation token system alone in a residential setting with predelinquent youth. *Journal of Applied Behavior Analysis, 11,* 503 - 512.

Workman, E. A. (1982). *Teaching Behavioral Self Control to Students.* Texas: PRO - ED.

Workman, E. A., Helton, G. B. and Watson, P.J. (1982). Self - monitoring effects in a four - year - old child: an ecological behavior analysis. *Journal of School Psychology, 20,* 57 - 65.

Young, K.R., West, R.P., Smith, D.J. & Morgan, D.P. *Teaching Self - Management Strategies to Adolescents.* 1991, Sopris West Inc., California.

References

Borg, W.R. & Gall, M.D. Educational Research. An Introduction, 5th Edition. 1989, Longman Inc., New York.

Brigham, T.A. *Self - Management for Adolescents. A Skills Training Program.* (1989), Guilford Press, New York, NY.

Dunlap, L.K., Dunlap, G. Koegel, L.K. & Koegel, R.L. (1991). Using self- management to increase independence. *Teaching Exceptional Children, 23(3),* 17 - 22.

Esveldt - Dawson, K. & Kazdin, A.E. (1982). *How To Use Self - Control.* H & H Enterprises, Inc., Lawrence Kansas.

Martens, B. K. & Meller, P. J. The Application of Behavioral Principles to Educational Settings. In, *The Handbook of School Psychology. 2nd. Ed.* 1990, John Wiley and Sons Inc.:USA.

Jenson, W.R., Sloane, H.N. & Young, K.R. *Applied Behavior Analysis in Education. A Structured Teaching Approach.* 1988, Prentice Hall, Englewood Cliffs, New Jersey.

Kahn, W.J. (1976). Self - management: learning to be our own counsellor. *The Personnel and Guidance Journal, 55,* 176 - 188.

Kapadia, S. & Fantuzzo, J.W. (1988). Training children with developmental disabilities and severe behavior problems to use self - management procedures to sustain attention to preacademic/academic tasks. *Educaiton and Training in Mental Retardation, 23(1),* 59 - 69.

Kazdin, A.E. Self - monitoring and behavior change. In, *Self - Control: Power to the Person,* M.J. Mahoney & C.E. Thoresen, Eds. 1974, Wadsworth Publishing Co., Inc., California.

Mace, F.C. & West, B.J. (1986). Unresolved theoretical issues in self - management: implications for research and practise. *Professional School Psychology, 1(3),* 149 -163.

Nelson, R.O. Assessment and Therapeutic Functions of Self - Monitoring. In, *Progress in Behavior Modification, vol. 5,* M. Hersen, R.M. Eisler and P.M. Miller, Eds. 1977, Academic Press Inc., London.

Rosenbaum, M.S. & Drabman, R.S. (1979). Self - control training in the Classroom: a review and critique. *Journal og Applied Behavior Analysis, 12,* 467 - 485.

Rutherford, J., & Nelson, C.M. Generalization and Maintenance of Treatment Effects. In *Handbook of Behavior Therapy in Education,* J.C. Witt, S.N. Elliott and F.M. Gresham, Eds. 1988, Plenum Press, New York.

Schunk, D. H. Social Cognitive Theory and Self - Regulated Learnin. In *Self - Regulated Learning and Academic Achievement. Theory, Research and Practice,* B.J. Zimmerman, D.H. Schunk, Eds. 1989, Springer - Verlag, New York Inc.

Workman, E. A. & Hector, M. A. (1978). Behavioral self - control in classroom settings: a review of the literature. *Journal of School Psychology, 16,* 227 - 236.

Appendix 1

Abbreviations

4E - grade 4 experimental group

4C - grade 4 control group

6E - grade 6 experimental group

6C - grade 6 control group

SS - sum of squares

S - variance

SD - standard deviation

L - listening behavior

OT - on - task behavior

E - effort

AC - assignment completion

DS - difference score

YS - You and School questionnaire

SR - self - rating

TR - teacher rating

Appendix 2
Raw Data

Grade 4 Experimental Group
Self Rating Pretest

Subject	L	OT	E	AC	Total
1	2	1	1	1	5
2	1	1	1	1	4
3	2	1	1	2	6
4	1	1	1	1	4
5	2	2	3	1	8
6	2	1	1	1	5
7	2	1	2	1	6
8	2	1	2	1	6
9	1	2	2	2	7
10	2	1	1	2	6
11	1	2	2	2	7
12	2	2	2	2	8
13	1	1	2	1	5
14	2	2	3	2	9
15	1	2	2	1	6
16	2	2	2	2	8
17	2	1	2	1	6
18	1	1	2	1	5
19	3	3	3	2	11
20	2	2	1	1	6
21	2	1	1	1	5
22	3	3	2	3	11
23	1	1	1	1	4
24	2	1	1	1	5
Total	**42**	**36**	**41**	**34**	**153**
MEAN	**1.75**	**1.50**	**1.71**	**1.42**	**6.38**
SS	**8.50**	**10.00**	**10.96**	**7.83**	**87.62**
S	**0.37**	**0.43**	**0.48**	**0.34**	**3.81**
SD	**0.61**	**0.66**	**0.69**	**0.58**	**1.95**

Grade 4 Experimental Group
Self Rating Posttest

Subject	L	OT	E	AC	Total	DS
1	2	1	1	1	5	0
2	1	1	1	1	4	0
3	1	1	2	1	5	1
4	1	1	1	1	4	0
5	1	1	1	1	4	4
6	1	1	1	1	4	1
7	2	1	1	1	5	1
8	1	1	1	2	5	1
9	1	1	1	1	4	3
10	1	1	1	1	4	2
11	1	1	1	2	5	2
12	1	2	1	1	5	3
13	1	1	1	1	4	1
14	2	2	2	2	8	1
15	1	2	1	1	5	1
16	1	1	2	2	6	2
17	1	2	1	2	6	0
18	1	1	1	1	4	1
19	3	2	3	2	10	1
20	1	1	1	1	4	2
21	1	1	1	1	4	1
22	2	3	1	1	7	4
23	1	1	1	1	4	0
24	1	1	1	1	4	1
Total	**30**	**31**	**29**	**30**	**120**	**33**
MEAN	**1.25**	**1.29**	**1.21**	**1.25**	**5.00**	**1.74**
SS	**6.50**	**6.96**	**5.96**	**4.50**	**52.00**	
S	**0.28**	**0.30**	**0.26**	**0.20**	**2.26**	
SD	**0.53**	**0.55**	**0.51**	**0.44**	**1.50**	

Grade 4 Experimental Group
Teacher Rating Pretest

Subject	L	OT	E	AC	Total
1	2	2	2	2	8
2	1	1	1	1	4
3	1	1	1	1	4
4	1	1	1	1	4
5	3	3	3	3	12
6	2	2	2	2	8
7	2	2	2	2	8
8	1	1	1	1	4
9	2	2	2	2	8
10	1	1	1	1	4
11	1	1	2	2	6
12	1	1	1	1	4
13	2	1	1	1	5
14	1	1	1	1	4
15	1	1	1	1	4
16	2	2	2	2	8
17	1	1	1	1	4
18	1	1	1	1	4
19	3	3	3	3	12
20	1	1	1	2	5
21	1	1	1	1	4
22	2	2	2	1	7
23	1	1	1	1	4
24	1	1	1	1	4
Total	**35**	**34**	**35**	**35**	**139**
MEAN	**1.46**	**1.42**	**1.46**	**1.46**	**5.79**
SS	**9.96**	**9.83**	**9.96**	**9.96**	**145.96**
S	**0.43**	**0.43**	**0.43**	**0.43**	**6.35**
SD	**0.66**	**0.65**	**0.66**	**0.66**	**2.52**

Grade 4 Experimental Group
Teacher Rating Posttest

Subject	L	OT	E	AC	Total	DS
1	2	1	1	1	5	3
2	1	1	1	1	4	0
3	1	1	1	1	4	0
4	1	1	1	1	4	0
5	1	1	2	1	5	7
6	2	1	1	1	5	3
7	2	2	1	1	6	2
8	1	1	1	1	4	0
9	2	1	1	1	5	3
10	1	1	1	1	4	0
11	1	1	1	1	4	2
12	1	1	1	1	4	0
13	2	1	1	1	5	0
14	1	1	1	1	4	0
15	1	1	1	1	4	0
16	2	1	1	1	5	3
17	1	1	1	1	4	0
18	1	1	1	1	4	0
19	3	3	3	3	12	0
20	1	1	1	1	4	1
21	1	1	1	1	4	0
22	2	1	1	1	5	2
23	1	1	1	1	4	0
24	1	1	1	1	4	0
Total	**33**	**27**	**27**	**26**	**113**	**26**
MEAN	**1.38**	**1.13**	**1.13**	**1.08**	**4.71**	**2.89**
SS	**7.63**	**4.62**	**4.62**	**3.83**	**62.96**	
S	**0.33**	**0.20**	**0.20**	**0.17**	**2.74**	
SD	**0.58**	**0.45**	**0.45**	**0.41**	**1.65**	

Grade 4 Experimental Group
You & School Questionnaire

Subject	Pretest	Posttest	DS
1	14	13	-1
2	11	12	1
3	12	11	-1
4	12	11	-1
5	9	13	4
6	13	13	0
7	12	13	1
8	12	13	1
9	14	14	0
10	13	13	0
11	9	7	-2
12	9	10	1
13	11	11	0
14	11	14	3
15	13	13	0
16	15	14	-1
17	11	15	4
18	14	15	1
19	12	12	0
20	11	8	-3
21	9	8	-1
22	14	11	-3
23	11	12	1
24	9	9	0
Total	**281**	**285**	**17/-13**
MEAN	**11.71**	**11.88**	**0.53/0.62**
SS	**76.96**	**110.62**	
S	**3.35**	**4.81**	
SD	**1.83**	**2.19**	

Grade 4 Control Group
Self Rating Pretest

Subject	L	OT	E	AC	Total
1	1	1	2	1	5
2	1	2	1	1	5
3	1	1	1	1	4
4	1	1	1	1	4
5	2	2	1	1	6
6	1	2	2	1	6
7	1	1	1	1	4
8	1	1	1	1	4
9	1	1	1	1	4
10	1	1	1	1	4
11	1	1	2	1	5
12	2	2	2	2	8
13	2	2	1	2	7
14	2	2	3	2	9
15	2	1	1	1	5
16	2	2	1	2	7
17	1	1	2	1	5
18	2	2	2	2	8
19	2	1	1	2	6
20	2	2	2	2	8
21	2	1	2	1	6
22	2	1	1	1	5
23	2	2	2	1	7
24	2	1	2	2	7
Total	**37**	**34**	**36**	**32**	**139**
MEAN	**1.54**	**1.42**	**1.50**	**1.33**	**5.79**
SS	**5.96**	**5.83**	**8.00**	**5.33**	**53.96**
S	**0.26**	**0.25**	**0.35**	**0.23**	**2.35**
SD	**0.51**	**0.50**	**0.59**	**0.48**	**1.53**

Grade 4 Control Group
Self Rating Posttest

Subject	L	OT	E	AC	Total	DS
1	2	2	1	1	6	-1
2	1	1	1	1	4	1
3	1	1	1	1	4	0
4	1	1	1	1	4	0
5	2	2	1	1	6	0
6	2	1	2	1	6	0
7	1	1	1	1	4	0
8	1	1	2	1	5	-1
9	1	1	1	1	4	0
10	2	1	1	2	6	-2
11	1	1	2	1	5	0
12	2	2	2	2	8	0
13	2	2	2	1	7	0
14	2	3	2	2	9	0
15	1	1	2	2	6	-1
16	2	2	1	1	6	1
17	1	1	1	1	4	1
18	2	2	2	2	8	0
19	1	1	1	1	4	2
20	2	2	2	2	8	0
21	2	2	1	1	6	0
22	1	1	2	2	6	-1
23	2	2	1	1	6	1
24	1	1	1	2	5	2
Total	**36**	**35**	**34**	**32**	**137**	**8 / -6**
MEAN	**1.50**	**1.46**	**1.42**	**1.33**	**5.71**	**1.33/1.2**
SS	**6.00**	**7.96**	**5.83**	**5.33**	**50.96**	
S	**0.26**	**0.35**	**0.25**	**0.23**	**2.22**	
SD	**0.51**	**0.59**	**0.50**	**0.48**	**1.49**	

Grade 4 Control Group
Teacher Rating Pre/Posttest

Subject	L	OT	E	AC	Total
1	1	2	2	1	6
2	1	2	2	2	7
3	1	1	2	1	5
4	1	1	2	2	6
5	1	1	2	1	5
6	1	1	1	1	5
7	1	1	1	1	4
8	1	1	2	1	5
9	1	1	1	1	4
10	1	2	1	2	6
11	1	1	2	1	5
12	1	2	2	1	6
13	2	2	2	2	8
14	2	1	2	2	7
15	1	1	1	1	4
16	1	2	2	2	7
17	1	2	2	2	7
18	2	1	2	1	6
19	1	1	1	1	4
20	2	2	3	2	9
21	1	1	2	1	5
22	1	1	1	1	4
23	1	1	1	1	4
24	1	1	1	1	4
Total	**28**	**33**	**41**	**32**	**134**
MEAN	**1.17**	**1.38**	**1.71**	**1.33**	**5.58**
SS	**3.33**	**5.33**	**7.33**	**5.33**	**45.96**
S	**0.14**	**0.23**	**0.32**	**0.23**	**2.00**
SD	**0.38**	**0.48**	**0.56**	**0.48**	**1.41**

Grade 4 Control Group
You & School Questionnaire

Subject	Pretest	Posttest	DS
1	12	12	0
2	13	12	-1
3	13	14	1
4	12	9	-3
5	11	14	3
6	13	14	1
7	13	13	0
8	13	13	0
9	14	14	0
10	14	12	-2
11	13	11	-2
12	12	13	1
13	11	10	-1
14	10	13	3
15	14	14	0
16	9	14	5
17	10	10	0
18	12	13	1
19	11	13	2
20	12	13	1
21	14	13	-1
22	13	13	0
23	12	14	2
24	12	12	0
Total	**293**	**303**	**20/-10**
MEAN	**12.21**	**12.63**	**2/-1.67**
SS	**41.96**	**45.62**	
S	**1.82**	**1.98**	
SD	**1.35**	**1.41**	

Grade 6 Experimental Group
Self Rating Pretest

Subject	L	OT	E	AC	Total
1	2	2	1	1	6
2	2	1	1	1	5
3	2	2	3	3	10
4	2	1	1	1	5
5	1	1	1	1	4
6	2	2	1	2	7
7	3	3	3	1	10
8	2	2	2	1	7
9	2	2	2	1	7
10	2	2	2	1	7
11	2	2	1	2	7
12	1	2	2	1	6
13	1	2	2	1	6
14	1	2	1	1	5
15	1	1	1	1	4
16	2	2	1	1	6
17	1	2	2	1	6
18	2	1	1	1	5
19	2	1	2	1	6
20	1	1	1	1	4
21	1	2	2	1	6
22	2	2	2	2	8
23	2	1	2	2	7
24	2	2	1	1	6
25	1	1	1	1	4
Total	**42**	**42**	**39**	**31**	**154**
MEAN	**1.68**	**1.68**	**1.56**	**1.24**	**6.16**
SS	**7.44**	**7.44**	**10.16**	**1.44**	**34.56**
S	**0.31**	**0.31**	**0.42**	**0.27**	**2.56**
SD	**0.56**	**0.56**	**0.65**	**0.52**	**1.60**

Grade 6 Experimental Group
Self Rating Posttest

Subject	**L**	**OT**	**E**	**AC**	**Total**	**DS**
1	2	1	1	1	5	1
2	1	1	1	2	5	0
3	1	1	1	1	4	6
4	1	1	1	1	4	1
5	1	1	1	1	4	0
6	1	2	1	1	5	2
7	1	1	1	1	4	6
8	2	1	1	2	6	1
9	2	1	1	2	6	1
10	2	2	1	1	6	1
11	1	1	1	2	5	2
12	2	1	1	1	5	1
13	1	1	1	2	5	1
14	1	2	1	2	6	-1
15	2	1	1	1	5	-1
16	2	1	1	1	5	1
17	1	1	1	1	4	2
18	2	1	1	1	5	0
19	2	1	1	1	5	1
20	1	2	1	1	5	-1
21	1	1	1	1	4	2
22	1	2	1	2	6	2
23	1	2	1	1	5	2
24	2	2	2	1	7	-1
25	1	1	1	1	4	0
Total	**35**	**32**	**26**	**32**	**125**	**30/-4**
MEAN	**1.40**	**1.28**	**1.04**	**1.28**	**5.00**	**1.76/-1.00**
SS	**6.00**	**5.04**	**0.96**	**5.04**	**16.00**	
S	**0.25**	**0.21**	**0.04**	**0.21**	**0.67**	
SD	**0.50**	**0.46**	**0.20**	**0.46**	**0.82**	

Grade 6 Experimental Group
Teacher Rating Pretest

Subject	L	OT	E	AC	Total
1	2	2	2	1	7
2	2	2	1	1	6
3	2	2	2	3	9
4	2	2	2	1	7
5	1	1	1	1	4
6	2	2	2	1	7
7	2	2	2	2	8
8	2	2	2	2	8
9	2	2	2	2	8
10	2	2	2	1	7
11	1	1	2	2	6
12	2	2	2	1	7
13	1	1	1	1	4
14	2	2	2	2	8
15	1	1	1	1	4
16	2	2	2	2	8
17	2	1	1	1	5
18	2	2	2	2	8
19	2	1	2	2	7
20	1	2	1	1	5
21	2	2	2	2	8
22	2	2	1	1	6
23	2	1	2	2	7
24	2	2	2	2	8
25	1	1	1	1	4
Total	**44**	**42**	**42**	**38**	**166**
MEAN	**1.76**	**1.68**	**1.68**	**1.52**	**6.64**
SS	**4.56**	**5.44**	**5.44**	**8.24**	**6.76**
S	**0.19**	**0.23**	**0.23**	**0.34**	**2.32**
SD	**0.44**	**0.48**	**0.48**	**0.59**	**1.52**

Grade 6 Experimental Group
Teacher Rating Posttest

Subject	L	OT	E	AC	Total	DS
1	1	1	2	1	5	2
2	1	1	1	1	4	2
3	1	2	2	3	8	1
4	1	1	2	1	5	2
5	1	1	1	1	4	0
6	1	1	1	1	4	3
7	1	1	1	1	4	4
8	2	1	2	1	6	2
9	2	1	2	1	6	2
10	1	1	2	1	5	2
11	1	1	2	1	5	1
12	1	1	2	1	5	2
13	1	1	1	1	4	0
14	1	1	2	1	5	3
15	1	1	1	1	4	0
16	2	2	2	2	6	2
17	1	1	1	1	4	1
18	1	2	2	1	6	2
19	1	1	1	1	4	3
20	1	1	1	1	4	1
21	1	1	1	1	4	4
22	1	1	1	1	4	2
23	1	1	1	1	4	3
24	1	2	1	2	6	2
25	1	1	1	1	4	0
Total	**28**	**29**	**36**	**29**	**120**	**46**
MEAN	**1.12**	**1.16**	**1.44**	**1.16**	**4.80**	**1.84**
SS	**2.64**	**3.36**	**6.16**	**5.36**	**26.00**	
S	**0.11**	**0.14**	**0.26**	**0.22**	**1.08**	
SD	**0.33**	**0.37**	**0.51**	**0.47**	**1.04**	

Grade 6 Experimental Group
You & School Questionnaire

Subject	Pretest	Posttest	DS
1	14	15	1
2	13	13	0
3	11	11	0
4	14	15	1
5	13	14	1
6	11	14	3
7	5	9	4
8	11	12	1
9	9	14	5
10	8	12	4
11	12	10	-2
12	12	14	2
13	9	12	3
14	13	12	1
15	15	15	0
16	12	12	0
17	10	11	1
18	15	12	-3
19	11	13	2
20	12	11	-1
21	9	13	4
22	8	11	3
23	12	12	0
24	12	14	2
25	12	14	2
Total	**283**	**315**	**40/-6**
MEAN	**11.32**	**12.60**	**-2.00**
SS	**133.44**	**62.00**	
S	**5.56**	**2.58**	
SD	**2.36**	**1.61**	

Grade 6 Control Group
Self Rating Pretest

Subject	L	OT	E	AC	Total
1	2	1	2	1	6
2	1	1	1	1	4
3	1	1	1	1	4
4	2	2	1	1	6
5	2	2	2	1	7
6	2	2	1	1	6
7	1	1	2	2	6
8	2	2	2	1	7
9	2	3	2	1	8
10	1	1	1	1	4
11	1	1	1	1	4
12	2	2	2	3	9
13	2	3	3	3	11
14	2	2	2	1	7
15	2	2	1	1	6
16	2	2	2	2	8
17	1	2	2	1	6
18	1	2	2	1	6
19	2	3	2	2	9
20	2	1	1	1	5
21	2	2	2	2	8
22	2	2	1	2	7
23	1	2	2	1	6
24	1	1	1	1	4
25	2	2	2	1	7
Total	**41**	**45**	**41**	**34**	**161**
MEAN	**1.64**	**1.80**	**1.64**	**1.36**	**6.44**
SS	**5.76**	**10.00**	**7.76**	**9.76**	**76.16**
S	**0.24**	**0.42**	**0.32**	**0.41**	**3.17**
SD	**0.49**	**0.65**	**0.57**	**0.64**	**1.78**

Grade 6 Control Group
Self Rating Posttest

Subject	L	OT	E	AC	Total	DS
1	2	2	2	3	9	-3
2	1	1	1	1	4	0
3	2	1	1	1	5	-1
4	2	2	1	1	6	0
5	2	2	2	1	7	0
6	1	1	1	1	4	2
7	2	2	2	2	8	-2
8	2	1	2	1	6	1
9	2	2	1	1	6	2
10	2	1	1	1	5	-1
11	1	1	1	1	4	0
12	2	2	1	2	7	2
13	3	3	3	3	12	-1
14	2	2	2	2	8	-1
15	1	2	1	1	5	1
16	2	2	2	2	8	0
17	1	2	2	1	6	0
18	2	2	1	2	7	-1
19	2	2	2	1	7	2
20	1	1	1	1	4	1
21	2	2	2	2	8	0
22	2	2	1	1	6	1
23	2	1	2	1	6	0
24	1	1	1	1	4	0
25	2	2	2	1	7	0
Total	**44**	**42**	**38**	**35**	**159**	**1.50**
MEAN	**1.76**	**1.68**	**1.52**	**1.40**	**6.36**	**-1.43**
SS	**6.56**	**7.44**	**8.24**	**10.00**	**85.76**	
S	**0.27**	**0.31**	**0.34**	**0.42**	**3.57**	
SD	**0.52**	**0.56**	**0.59**	**0.65**	**1.89**	

Grade 6 Control Group
Teacher Rating Pre/Posttest

Subject	L	OT	E	AC	Total
1	2	2	2	1	7
2	2	1	1	1	4
3	1	1	1	1	4
4	2	2	2	1	7
5	1	2	1	1	5
6	1	1	1	1	4
7	1	1	2	1	5
8	1	2	2	1	6
9	2	2	2	1	7
10	2	2	1	1	6
11	1	1	1	1	4
12	2	2	2	3	9
13	2	2	3	3	10
14	1	1	1	1	4
15	2	1	2	2	7
16	2	2	3	3	10
17	1	1	3	1	6
18	2	2	3	1	8
19	2	2	3	3	10
20	1	2	1	1	5
21	1	1	2	1	5
22	1	1	1	1	4
23	1	1	2	1	5
24	1	1	2	1	5
25	1	2	1	1	5
Total	**36**	**38**	**45**	**34**	**152**
MEAN	**1.44**	**1.52**	**1.80**	**1.36**	**6.08**
SS	**6.16**	**6.24**	**14.00**	**13.76**	**46.56**
S	**0.26**	**0.26**	**0.58**	**0.57**	**3.99**
SD	**0.51**	**0.51**	**0.76**	**0.76**	**2.00**

Grade 6 Control Group
You & School Pre/Posttest

Subject	Pretest	Posttest	DS
1	14	13	-1
2	15	13	-2
3	15	13	-2
4	8	9	1
5	13	15	2
6	15	13	-2
7	13	14	1
8	12	14	2
9	15	15	0
10	15	15	0
11	15	15	0
12	9	9	0
13	11	12	1
14	13	9	-4
15	14	15	1
16	5	9	4
17	10	9	-1
18	10	13	3
19	10	6	-4
20	15	15	0
21	12	15	3
22	9	14	5
23	14	12	-2
24	14	14	0
25	11	14	3
Total	**307**	**315**	**8**
MEAN	**12.28**	**12.60**	
SS	**177.04**	**160.00**	
S	**7.38**	**6.67**	
SD	**2.72**	**2.58**	

Appendix 3

Frequency of Raw Score Data

Grade 4 Experimental Group

Raw Score	Self Rating Frequency		Teacher Rating Frequency		You & School Frequency	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
4	3	12	13	15		
5	6	7	2	7		
6	7	2	1	1		
7	2	1	1	0	0	1
8	3	1	5	0	0	2
9	1	0	0	0	5	1
10	0	1	0	0	0	1
11	2	0	0	0	6	4
12	0	0	2	1	5	3
13					3	7
14					4	3
15					1	2

Grade 4 Control Group

<table>
<tr><th rowspan="2">Raw Score</th><th colspan="2">Self Rating Frequency</th><th colspan="2">Teacher Rating Frequency</th><th colspan="2">You & School Frequency</th></tr>
<tr><th>Pretest</th><th>Posttest</th><th>Pretest</th><th>Posttest</th><th>Pretest</th><th>Posttest</th></tr>
<tr><td>4</td><td>6</td><td>7</td><td colspan="2">7</td><td></td><td></td></tr>
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<tr><td>11</td><td>0</td><td>0</td><td colspan="2">0</td><td>3</td><td>1</td></tr>
<tr><td>12</td><td>0</td><td>0</td><td colspan="2">0</td><td>7</td><td>4</td></tr>
<tr><td>13</td><td></td><td></td><td colspan="2"></td><td>7</td><td>9</td></tr>
<tr><td>14</td><td></td><td></td><td colspan="2"></td><td>4</td><td>7</td></tr>
<tr><td>15</td><td></td><td></td><td colspan="2"></td><td>0</td><td>0</td></tr>
</table>

Grade 6 Experimental Group						
Raw Score	Self Rating Frequency		Teacher Rating Frequency		You & School Frequency	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
4	4	7	4	13		
5	4	12	2	6	1	0
6	8	5	3	5	0	0
7	6	1	7	0	0	0
8	1	0	8	1	2	0
9	2	0	1	0	3	1
10	0	0	0	0	1	1
11	0	0	0	0	4	4
12	0	0	0	0	7	7
13					3	3
14					2	6
15					2	3

Grade 4 Control Group						
Raw Score	Self Rating Frequency		Teacher Rating Frequency		You & School Frequency	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
4	5	5	6			
5	1	3	7		1	0
6	8	6	3		0	1
7	5	5	4		0	0
8	3	4	1		1	0
9	2	1	1		2	5
10	0	0	3		3	0
11	1	0	0		2	0
12	0	1	0		2	2
13					3	5
14					4	5
15					7	7

Appendix 4
Descriptive Statistics

Grade 4E Group	Self Rating		Teacher Rating		You and School	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Mean	6.38	5.00	5.79	4.70	11.71	11.88
Median	6.00	4.50	4.00	4.00	12.00	13.50
Mode	6.00	4.00	4.00	4.00	11.00	13.00
Range	4 to 11	4 to 10	4 to12	4 to12	9 to 15	7 to 15
Variance	3.81	2.26	6.30	2.74	3.35	4.81
SD	1.95	1.50	1.50	1.64	1.83	2.19

Grade 4C Group	Self Rating		Teacher Rating		You and School	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Mean	5.79	5.71	5.58	5.58	12.21	12.63
Median	5.50	6.00	5.00	5.00	12.00	13.00
Mode	4 & 5	6.00	4.00	4.00	13 & 12	13.00
Range	4 to 9	4 to 9	4 to 9	4 to 9	9 to 14	9 to 14
Variance	2.35	2.22	2.00	2.00	1.82	1.98
SD	1.53	1.49	1.41	1.41	1.35	1.41

Grade 6E Group	Self Rating		Teacher Rating		You and School	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Mean	6.24	5.00	6.64	4.80	11.32	12.60
Median	6.00	5.00	7.00	4.00	12.00	12.00
Mode	6.00	5.00	8.00	4.00	12.00	12.00
Range	4 to 10	4 to 7	4 to 9	4 to 8	8 to 15	9 to 15
Variance	1.44	0.60	0.28	1.08	5.56	2.58
SD	1.20	0.80	0.53	1.04	2.36	1.61

Grade 6C Group	Self Rating		Teacher Rating		You and School	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Mean	6.44	6.36	6.44	6.44	12.28	12.60
Median	6.00	6.00	5.00	5.00	13.00	13.00
Mode	6.00	6.00	5.00	5.00	15.00	15.00
Range	4 to 11	4 to 12	4 to 10	4 to 10	5 to 15	6 to 15
Variance	3.17	3.57	1.94	1.94	7.38	6.67
SD	1.78	1.89	1.39	1.39	2.72	2.58

Appendix 5

Nonparametric Statistical Analysis

Wilcoxon Signed Rank Test For Paired Difference Experiment

Grade 4E Self Rating Pretest vs. Posttest					
Subject	**Pretest**	**Posttest**	**Difference**	**Absolute**	**Rank**
1	6	5	1	1	6
2	8	4	4	4	18.5
3	5	4	1	1	6
4	6	5	1	1	6
5	6	5	1	1	6
6	7	4	3	3	16.5
7	6	4	2	2	13.5
8	7	5	2	2	13.5
9	8	5	3	3	16.5
10	5	4	1	1	6
11	9	8	1	1	6
12	6	5	1	1	6
13	8	6	2	2	13.5
14	5	4	1	1	6
15	11	10	1	1	6
16	6	4	2	2	13.5
17	5	4	1	1	6
18	11	7	4	4	18.5
19	5	4	1	1	6
					T+ = 190
					T- = 0

Grade 4E Teacher Rating Pretest vs. Posttest					
Subject	Pretest	Posttest	Difference	Absolute	Rank
1	8	5	3	3	6.5
2	12	5	7	7	9
3	8	5	3	3	6.5
4	8	6	2	2	3
5	8	5	3	3	6.5
6	6	4	2	2	3
7	8	5	3	3	6.5
8	5	4	1	1	1
9	7	5	2	2	3
					T+ = 45
					T- = 0

Grade 4E You And School Questionnaire					
Subject	Pretest	Posttest	Difference	Absolute	Rank
1	14	13	-1	1	6
2	11	12	1	1	6
3	12	11	-1	1	6
4	12	11	-1	1	6
5	9	13	4	4	16.5
6	12	13	1	1	6
7	12	13	1	1	6
8	9	7	-2	2	12
9	9	10	1	1	6
10	11	14	3	3	14
11	15	14	-1	1	6
12	11	15	4	4	16.5
13	14	15	1	1	6
14	11	8	-3	3	14
15	9	8	-1	1	6
16	14	11	-3	3	14
17	11	12	1	1	6
					T+ = 83
					T- = 70

Grade 4C Self Rating Pretest vs. Posttest					
Subject	**Pretest**	**Posttest**	**Difference**	**Absolute**	**Rank**
1	5	6	-1	1	4.5
2	5	4	1	1	4.5
3	4	5	-1	1	4.5
4	4	6	-2	2	10
5	5	6	-1	1	4.5
6	7	6	1	1	4.5
7	5	4	1	1	4.5
8	6	4	2	2	10
9	5	6	-1	1	4.5
10	7	6	1	1	4.5
11	7	5	2	2	10
					T+ = 38
					T- = 28

Grade 4C You And School Questionnaire					
Subject	**Pretest**	**Posttest**	**Difference**	**Absolute**	**Rank**
1	13	12	-1	1	4.5
2	13	14	1	1	4.5
3	12	9	-3	3	14
4	11	14	3	3	14
5	13	14	1	1	4.5
6	14	12	-2	2	10.5
7	13	11	-2	2	10.5
8	12	13	1	1	4.5
9	11	10	-1	1	4.5
10	10	13	3	3	14
11	9	14	5	5	16
12	12	13	1	1	4.5
13	11	13	2	2	10.5
14	12	13	1	1	4.5
15	14	13	-1	1	4.5
16	12	14	2	2	10.5
					T+ = 87.5
					T- = 48.5

Grade 6E Self Rating Pretest vs. Posttest					
Subject	**Pretest**	**Posttest**	**Difference**	**Absolute**	**Rank**
1	6	5	1	1	7
2	10	4	6	6	20.5
3	5	4	1	1	7
4	7	5	2	2	16.5
5	10	4	6	6	20.5
6	7	6	1	1	7
7	7	6	1	1	7
8	7	6	1	1	7
9	7	5	2	2	16.5
10	6	5	1	1	7
11	6	5	1	1	7
12	5	6	-1	1	7
13	4	5	-1	1	7
14	6	5	1	1	7
15	6	4	2	2	16.5
16	6	5	1	1	7
17	4	5	-1	1	7
18	6	4	2	2	16.5
19	8	6	2	2	16.5
20	7	5	2	2	16.5
21	6	7	-1	1	7
					T+ = 203
					T- = 28

Grade 6E Teacher Rating Pretest vs. Posttest					
Subject	**Pretest**	**Posttest**	**Difference**	**Absolute**	**Rank**
1	7	5	2	2	10
2	6	4	2	2	10
3	9	8	1	1	2.5
4	7	5	2	2	10
5	7	4	3	3	17.5
6	8	4	4	4	20.5
7	8	6	2	2	10
8	8	6	2	2	10
9	7	5	2	2	10
10	6	5	1	1	2.5
11	7	5	2	2	10
12	8	5	3	3	17.5
13	8	6	2	2	10
14	5	4	1	1	2.5
15	8	6	2	2	10
16	7	4	3	3	17.5
17	5	4	1	1	2.5
18	8	4	4	4	20.5
19	6	4	2	2	10
20	7	4	3	3	17.5
21	8	6	2	2	10
					T+ = 231
					T- = 0

Grade 6E You And School Questionnaire					
Subject	**Pretest**	**Posttest**	**Difference**	**Absolute**	**Rank**
1	14	15	1	1	4
2	14	15	1	1	4
3	13	14	1	1	4
4	11	14	3	3	14.5
5	5	9	4	4	18
6	11	12	1	1	4
7	9	14	5	5	20
8	8	12	4	4	18
9	12	10	-2	2	10
10	12	14	2	2	10
11	9	12	3	3	14.5
12	13	12	-1	1	4
13	10	11	1	1	4
14	15	12	-3	3	14.5
15	11	13	2	2	10
16	12	11	-1	1	4
17	9	13	4	4	18
18	8	11	3	3	14.5
19	12	14	2	2	10
20	12	14	2	2	10
					T+ = 177.5
					T- = 32.5

Grade 6C Self Rating Pretest And Posttest

Subject	Pretest	Posttest	Difference	Absolute	Rank
1	6	9	-3	3	15
2	4	5	-1	1	5
3	6	4	2	2	12
4	6	8	-2	2	12
5	7	6	1	1	5
6	8	6	2	2	12
7	4	5	-1	1	5
8	9	7	2	2	12
9	11	12	-1	1	5
10	7	8	-1	1	5
11	6	5	1	1	5
12	6	7	-1	1	5
13	9	7	2	2	12
14	5	4	1	1	5
15	7	6	1	1	5
					T+ = 68
					T- = 52

Grade 6C You And School Questionnaire

Subject	Pretest	Posttest	Difference	Absolute	Rank
1	14	13	-1	1	3.5
2	15	13	-2	2	9.5
3	15	13	-2	2	9.5
4	8	9	1	1	3.5
5	13	15	2	2	9.5
6	15	13	-2	2	9.5
7	13	14	1	1	3.5
8	12	14	2	2	9.5
9	11	12	1	1	3.5
10	13	9	-4	4	17
11	14	15	1	1	3.5
12	5	9	4	4	17
13	10	9	-1	1	3.5
14	10	13	3	3	14
15	10	6	-4	4	17
16	12	15	3	3	14
17	9	14	5	5	20
18	14	12	-2	2	9.5
19	11	14	3	3	14
					T+ = 98
					T- = 92